SEPTEMBER 8, 1956
VOL. 151—NO. 10

# Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

**UNDERGROUND STATIONS**

**Independents serve two national park caves. At left are Wind Cave Park's E. M. Semingsen (left) and Les Jensen, manager of Peoples T&T Co. of Hot Springs, S. D. At right is Doris Blakeney of General Telephone Co. in Carlsbad Caverns. See page 30.**

MANAGEMENT • PLANT • TRAFFIC • COMMERCIAL • LEGAL • ACCOUNTING

# NOW!

## SUTTLE TELEPHONE BOOTHS can increase YOUR revenue...

**WHICH ONE** of these subscriber pleasing, revenue producing, indoor wall mounted telephone booths answers the requirements of your newest business customer?

**HOW MANY** subscribers do you have that operate — drug stores, department stores, markets, gift shops, business offices, manufacturing or assembly plants, airline, bus, or rail terminals, parking lots, car dealers, hospitals, clinics, schools, country clubs, gas stations, taverns, restaurants — to name a few.

**SUPPLY ALL** your customers with the type of booth they need for better conduct of their business, and they will thank you for it—and order more phones.

**SUTTLE EQUIPMENT COMPANY** telephone booths fill the gap in your booth needs—supplement the outdoor booths you may now be using. Suttle booths include a model for every indoor location, and their ultra modern styling and guaranteed sound deadening performance promises customer satisfaction.

- Twenty-three basic styles and models to choose from!
- Cabinets: Steel, aluminum, wood, and pressed wood.
- Finishes include: Sahara mahogany, wheat, limed oak, platinum, painted (colors).
- Woods: Birch, oak, walnut, maple.
- Perforated acoustic linings: Steel, aluminum, plastic, hard or soft pressed wood, backed up with high efficiency sound absorbing material.
- Full line of accessories: signs, lights, sliding directory trays, seats, directory stands.

No glass to break—no maintenance required—no moving parts to fail. Installation is easy with mounting brackets supplied—shelf locations for directories, parcels, and writing—clean, airy enclosures.

Send today for several copies of the new, free, illustrated brochure to give to your business subscribers—show them you are interested in improving their service. Suttle engineers will be glad to work with you on custom installations as well.

***Order Suttle Booths direct from Suttle or from the following distributors:***

| | |
|---|---|
| Automatic Electric Sales Co. | North Electric Co. |
| General Electric Supply Co. | Pankey Supply Co. |
| Graybar Electric Co. | Jack Pruzan Co. |
| Kellogg Swbd. & Supply Co. | Stromberg-Carlson Co. |
| E. L. Klingel Co. | Telephone Repair & Supply Co. |
| Leich Sales Corp. | Terry-Durin Co. |

Westinghouse Electric Supply Co.

## SUTTLE EQUIPMENT COMPANY

**CHICAGO, ILL. • LAWRENCEVILLE, ILL.**

**DEarborn 2-3108** **Lawrenceville 782**

---

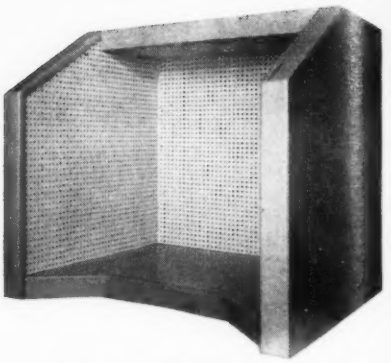
**Suttle Equipment Company, 135 S. La Salle St., Chicago 3, Ill.**

Gentlemen:

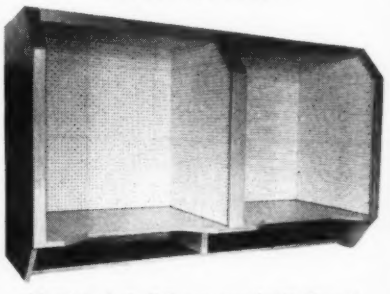
Please send me _____ copies of your new telephone booth brochure promptly; for my use and for distribution to my subscribers.

_____

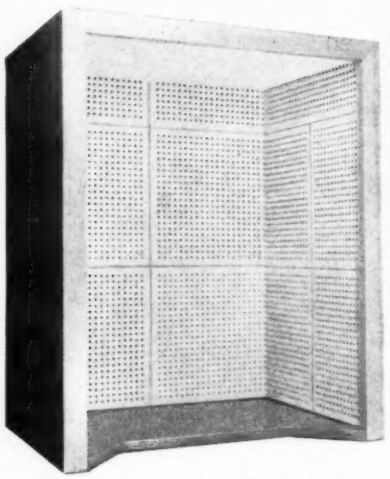
_____



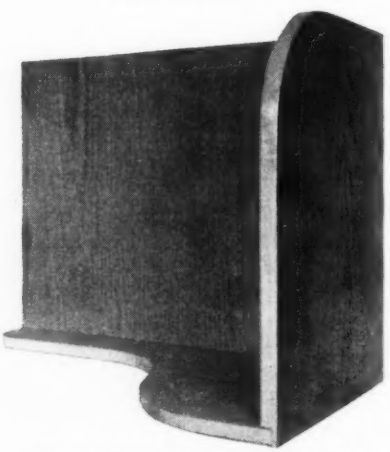
**Model A-5 "Modular" Booth**
**Single or multiple installation**
**Price: $110.00**



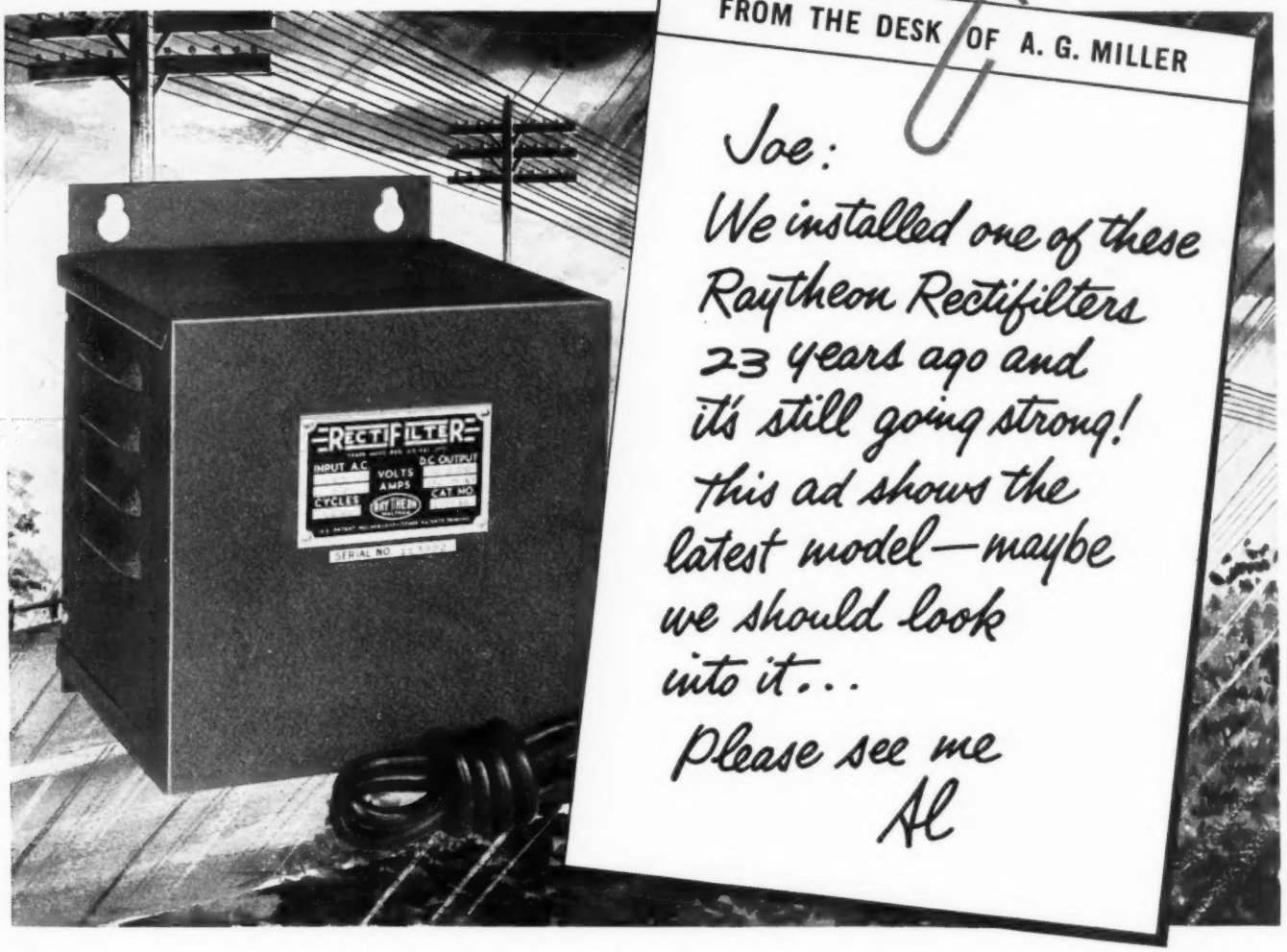
**Model A-6 "Commercial" Booth**
**Price: Single $95.25**
**Double $155.00**



**Model A-8 "Industri-Booth"**
**For noisy factory location**
**Price: $68.50**



**Model A-7 "Unit Row" Booth**
**Price: $34.50**




FROM THE DESK OF A. G. MILLER

Joe:
We installed one of these Raytheon Rectifilters 23 years ago and it's still going strong! This ad shows the latest model—maybe we should look into it...
Please see me
Al

# How to eliminate power supply problems

Raytheon Rectifilters® are a never-failing supply of D.C. voltage from A.C. sources. Operating entirely without moving parts, these units provide full, filtered, noise-free power to vital telephone equipment.

Raytheon Rectifilters eliminate the need for batteries; operate PBX's and other key equipment; provide 24 volt D.C. for vacuum tube filaments, and operate in series with regular 24 volt central office batteries for toll service.

Because they are conservatively rated, carefully engineered and made of finest quality components, they require an absolute minimum of service and provide many, many years of dependable performance.

Raytheon products for the telephone industry include Rectifilter battery eliminators, Recticharger® battery chargers and Rectiringer® eliminators with 20 cycle ringer—all available from your telephone supply house and Raytheon District Offices. Service and parts are supplied from ten locations throughout the USA. For full details, please write for Bulletin 4-335.

INDEPENDENT

## CHECK THESE IMPORTANT FEATURES

- √ **Minimum service—plug it in, close the door and forget it**
- √ **Fully automatic—no moving parts to wear out**
- √ **Outlasts many sets of batteries**
- √ **D.C. output voltage closely filtered and stabilized**
- √ **Compact, easily installed**
- √ **Ideal for seasonal installations**

**RAYTHEON MANUFACTURING COMPANY**

**Equipment Marketing Department, Waltham 54, Mass.**

RAYTHEON

*Excellence in Electronics*

A 4019

**"See Raytheon's exhibit at Room 551A, USITA show; Conrad Hilton Hotel, Chicago, Ill., Oct. 15-17."**

**GET READY...**

**GET SET...**

**GO!**

# 1956 CONVENTION USITA

**OCTOBER 15-16-17**

**CONRAD HILTON HOTEL**

**CHICAGO, ILLINOIS**

**General Sessions:** Topics of Outstanding Importance—USITA Annual Banquet—Food—Fun—Fellowship

**Conferences:** Plant—Traffic—Commercial—Accounting—Answers to Your Questions

**Independent Telephone Pioneer Association:** Annual Business Meeting and Entertainment

**UNITED STATES INDEPENDENT TELEPHONE ASSOCIATION**

Pennsylvania Bldg. • Washington, D. C.

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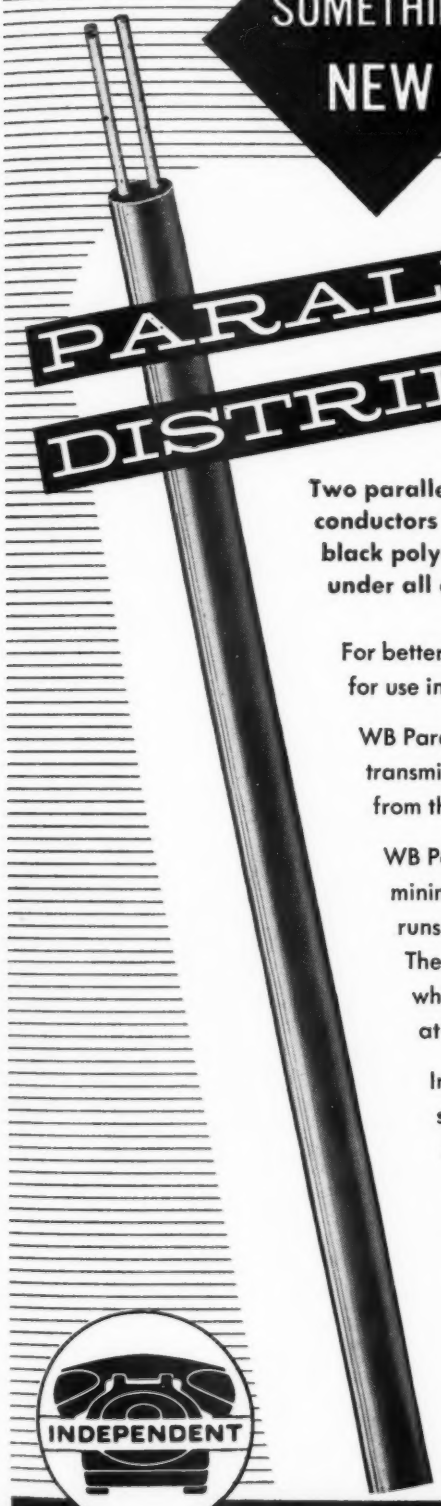
SOMETHING NEW

SOMETHING BETTER

WB

# PARALLEL DISTRIBUTION WIRE



**Two parallel extra high strength Copperweld conductors insulated with WB special tough, black polyethylene compound for long life under all conditions.**

For better service and greater economy WB Parallel Distribution Wire is designed for use in rural areas in place of open wire.

WB Parallel Distribution Wire gives better service because it provides better transmission qualities and its tough polyethylene jacket protects the conductors from the many conditions that harm open wire.

WB Parallel Distribution Wire is economical because it can be installed with minimum labor, the need for cross arms is eliminated. It may be used to extend runs of rural distribution wire where only one, two, or three pairs are required. The extra high strength Copperweld conductor permits long span construction which also makes this wire ideally suited for drop runs to service subscribers at distances from main pole lines.

In locations where atmospheric conditions are detrimental to open wires, such as on the sea coast, polyethylene insulated WB Parallel Distribution Wire is unaffected.

Available in #14 AWG and .080"extra high strength 30% conductivity, Copperweld conductors insulated with the same high molecular weight polyethylene jacket used on WB TELECABLE, assures long, economical service life.

INDEPENDENT

WB HAS that which so many others have yet to gain . . . EXPERIENCE

Well Built Wires Since 1899

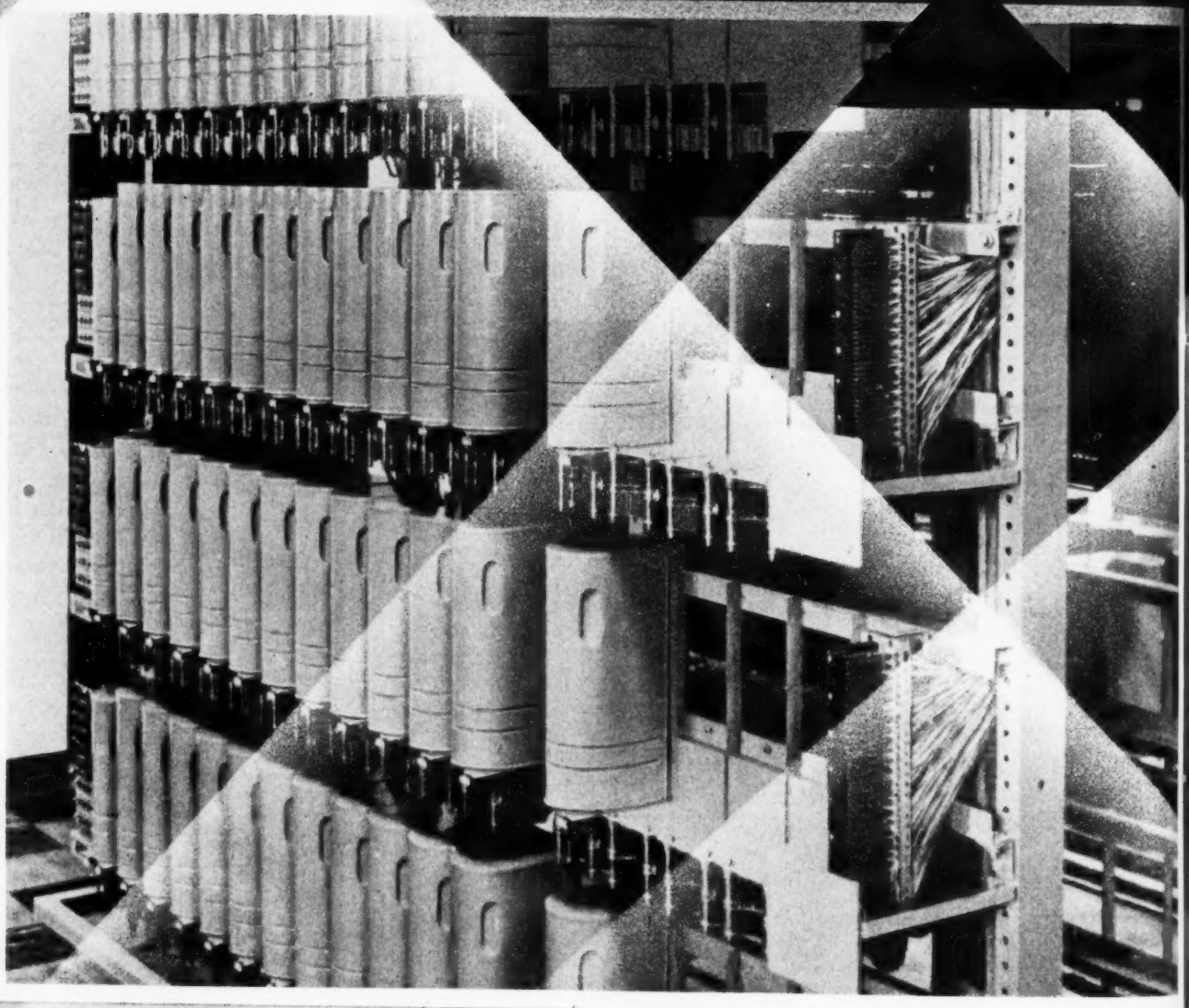
©1956

WHITNEY BLAKE COMPANY

NEW HAVEN 14, CONNECTICUT

# WHERE

# STEP-



**FEDERAL STEP-BY-STEP**
**DISTRIBUTED EXCLUSIVELY BY KELLOGG**

# TO BUY

# — by —

# STEP

*New Installations*

*Additions to present Equipment*

*Maintenance and Engineering*

**CHECK US FOR** *Quick* **DELIVERY**

# KELLOGG

A DIVISION OF ITT

**KELLOGG SWITCHBOARD AND SUPPLY COMPANY**
A DIVISION OF INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION
SALES OFFICES: 79 West Monroe Street, Chicago 3, Illinois

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Market 1-6011

410 N. Syndicate Ave.
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1515 Turtle Creek Blvd.
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Mansfield, Ohio
Mansfield 7-2816

1594 Southland Circle, N.W., Atlanta, Georgia, Sycamore 4-2441

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Los Angeles 13, California
Vandyke 6759

**EXPORT DISTRIBUTOR:**

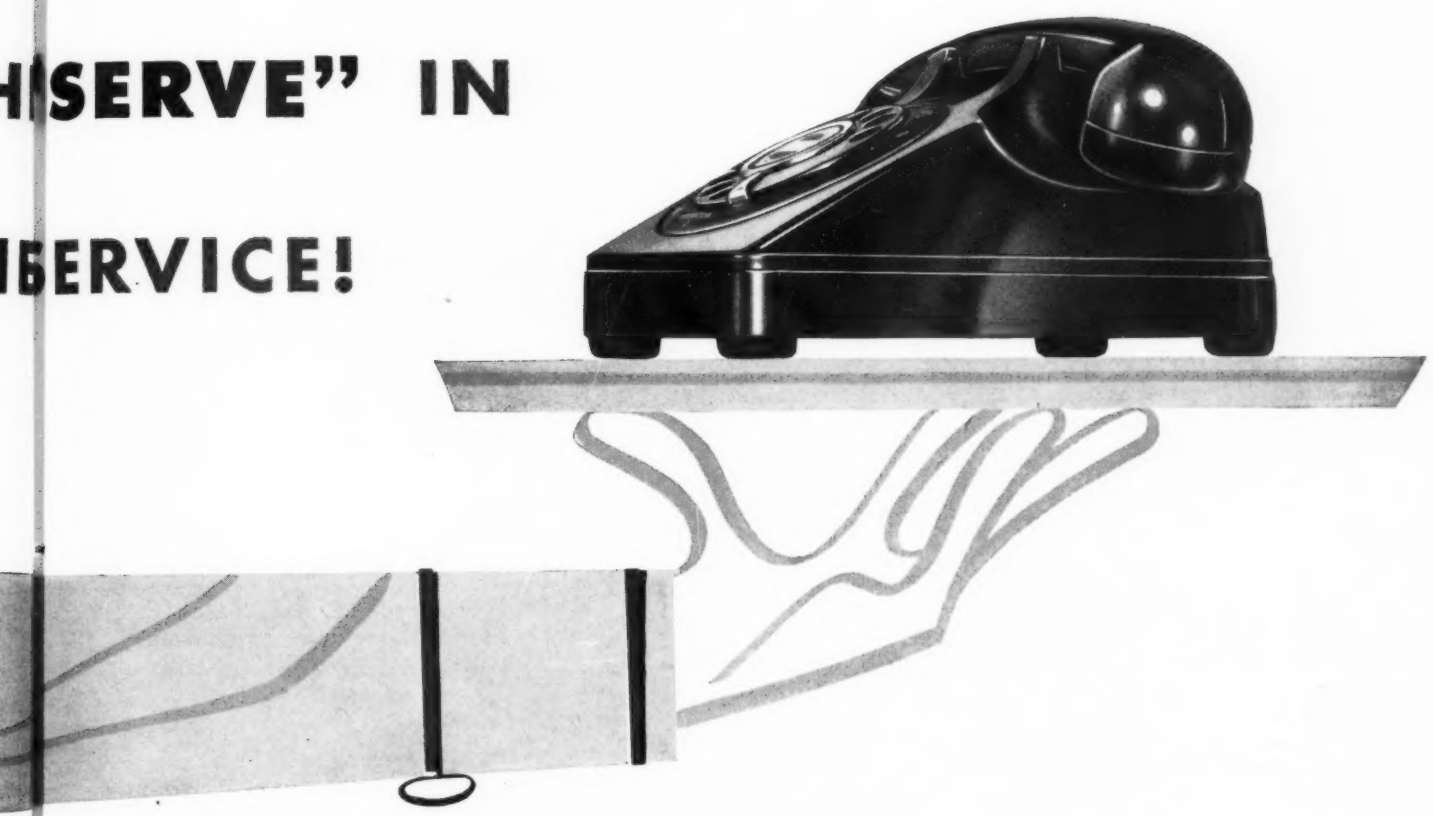
International Standard Electric Corp.
50 Church Street
New York 7, New York

NORTH ALL
PUT THIS
TELEPHONE
NORTH

# LELAY SWITCHBOARDS

# HSERVE" IN

# IBERVICE!



It is a characteristic of the Telephone Business that, despite billions of dollars invested in physical equipment, Telephone Companies really sell SERVICE.

NORTH ALL-RELAY SWITCHBOARDS play an important role in providing that "service."

To the subscriber, "service" means calls completed swiftly and accurately.

To the Telephone Company this means an exchange that provides this swift, accurate completion of calls with complete dependability and an absolute minimum of maintenance.

A North sales engineer will be glad to show you how the combination of dependability and low maintenance requirements, inherent in North All-Relay Exchanges, can give you, and your subscribers, the SERVICE that is synonymous with the Telephone Business.

## NORTH ELECTRIC COMPANY

601 SOUTH MARKET STREET • GALION, OHIO

XUM

# FLASHES AND PLUGS

**NO BARGAIN.** The conversation between a girlish, teen-age sounding voice and a Victoria, Tex., fireman was short and to the point.

The call came on Central Station's emergency telephone. "Is it against the law to play tricks on firemen?" the voice asked.

"It's a $100 fine," was the stern reply.

Bank went the receiver at the other end of the line.

•

**SALES PROMOTION.** A man in Charleston, S. C., complains because his home telephone number is similar to that of a bread company that gives the correct time when you dial it.

He says that one morning about 5 a. m., his telephone roused him. Overcome with sleep and annoyance, he answered, in a dull monotone:

"Blank Bread is encrusted with mold and is fairly alive with weevils. The time is 3:17."

•

**UNLISTED ASSET.** From St. David's in Wales came a report recently that Ramsey island, population four, with no telephones or cars to disturb the peace and quiet, has been offered for sale for $42,000.

The retreat has one important feature about which bidders really should be apprised. There is a legend that the ghost of St. Justinian promenades nightly and on cloudy days carrying his head in his hand to spite the monks who are said to have murdered him there centuries ago.

•

**WHEN CHAUNCEY "UPPERED" THE BOOM.** Calls coming into the telephone repair desk of the North Pittsburgh Telephone Co. of Gibsonia, Pa., were very infrequent and the man at the desk was just commencing to enjoy a bit of relaxation.

Bridge builders in the vicinity were busily engaged in hoisting materials for the new bridge. The relaxation for the desk repairman, Johnny Becker, did not last long. The lights commenced to flash and when Johnny flipped the key, the excited voice of a lady came over the wire:

"Get your line crew quick, a crane is in the telephone wires."

"Chauncey" Schoentag, the man in charge of the line repair crew, was quickly dispatched to the location of the bridge builders. He found nothing out of the ordinary.

However, gazing down along the telephone lines he spied a huge bird caught in the wires, flapping its wings for dear life. Being a good samaritan for wild life, "Chauncey" quickly released the bird from its entanglement.

And that's how "Chauncey" uppered the boom.

**CIRCULATION**

**Guaranteed circulation of this issue is 11,333 of which 10,809 is paid.**


Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
*Since 1901*

**September 8, 1956**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Telephone WA bash 2-2435

Standard one-position sections are available for Stromberg-Carlson No. 3 type board, to permit easy expansion at least investment. This board has many other design advantages, including individually removable jack sleeves, keysender operation, provision for operator toll dialing.

# This toll board grows a little at a time

## *. . . to save you money!*

Toll business continues its merry dance upward.

That's fine. Your earnings continue to grow, too.

But how do you plan for the future? Buy a toll switchboard larger than you need today? Or a smaller board, and add positions when you need them?

We recommend the latter, because it prevents tying up your money on equipment you're not using.

And we recommend the Stromberg-Carlson No. 3 toll board, because you can expand it *one position at a time*, continuing to give your subscribers the finest toll service while paying only for equipment that you are currently using.

This is just one of the many financial reasons for buying a Stromberg-Carlson No. 3 switchboard. For details on maintenance economy, faster operation, etc., call your Stromberg-Carlson office.

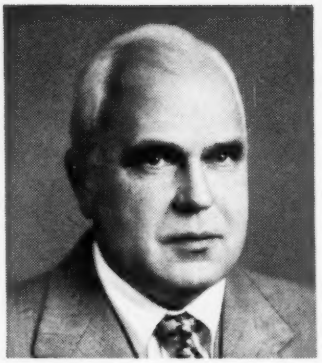
**STROMBERG-CARLSON COMPANY**

A DIVISION OF GENERAL DYNAMICS CORPORATION

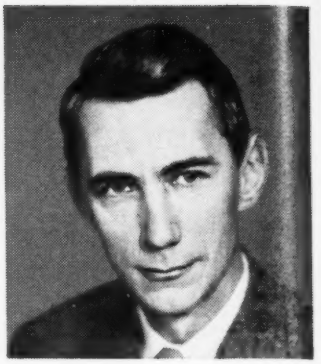
Sales Offices: Atlanta 3, Chicago 6, Kansas City 8, Rochester 3, San Francisco 3

**WARREN A. MARRISON.** Tompion Gold Medal, Worshipful Company of Clockmakers of the City of London, for pioneer work on development of quartz crystal oscillators as precision standards of time.

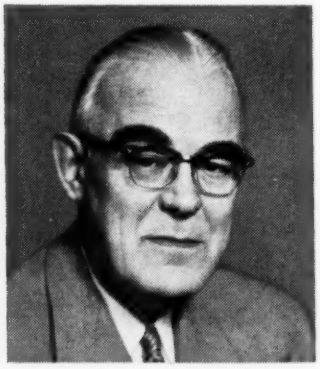
**W. G. PFANN.** Mathewson Gold Medal, American Institute of Mining and Metallurgical Engineers, for discovery of and pioneering research in zone melting.



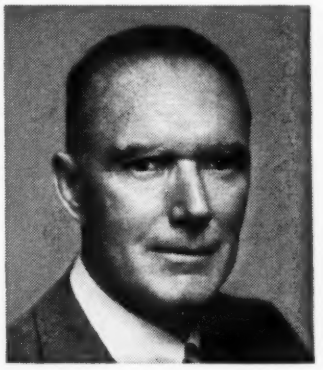
**H. T. FRIIS.** Medal of Honor, Institute of Radio Engineers and Valdemar Poulsen Gold Medal, Danish Academy of Technical Sciences; important work in application of short and ultra-short radio waves.



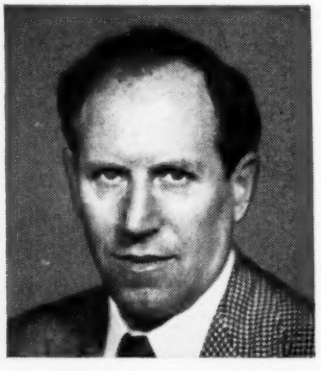
**CLAUDE E. SHANNON.** Stuart Ballantine Medal, Franklin Institute of the State of Pennsylvania, for contributions to a comprehensive theory of communication.



**AXEL G. JENSEN.** David Sarnoff Gold Medal, Society of Motion Picture and Television Engineers, for technical contributions to television; G. A. Hagemann Gold Medal for Industrial Research, Royal Technical College, Copenhagen.



**H. F. DODGE.** Shewhart Medal, American Society for Quality Control, for original contributions to the art of statistical quality control.



**R. KOMPFNER.** Duddell Medal, Physical Society of England, for his original work on the traveling wave tube.

**WALTER H. BRATTAIN.** Co-winner with Dr. John Bardeen of John Scott Medals, City of Philadelphia, for invention of the transistor.

# PIONEERS OF PROGRESS

These are some of our recent medal winners at Bell Laboratories. The awards they have won symbolize recognition for outstanding achievement in the many sciences that bear on telephony. Bell Labs is extremely proud of them—and of the thousands of scientists and engineers who work with them to keep the American telephone system the greatest in the world.

BELL TELEPHONE LABORATORIES

WORLD CENTER OF COMMUNICATIONS RESEARCH AND DEVELOPMENT

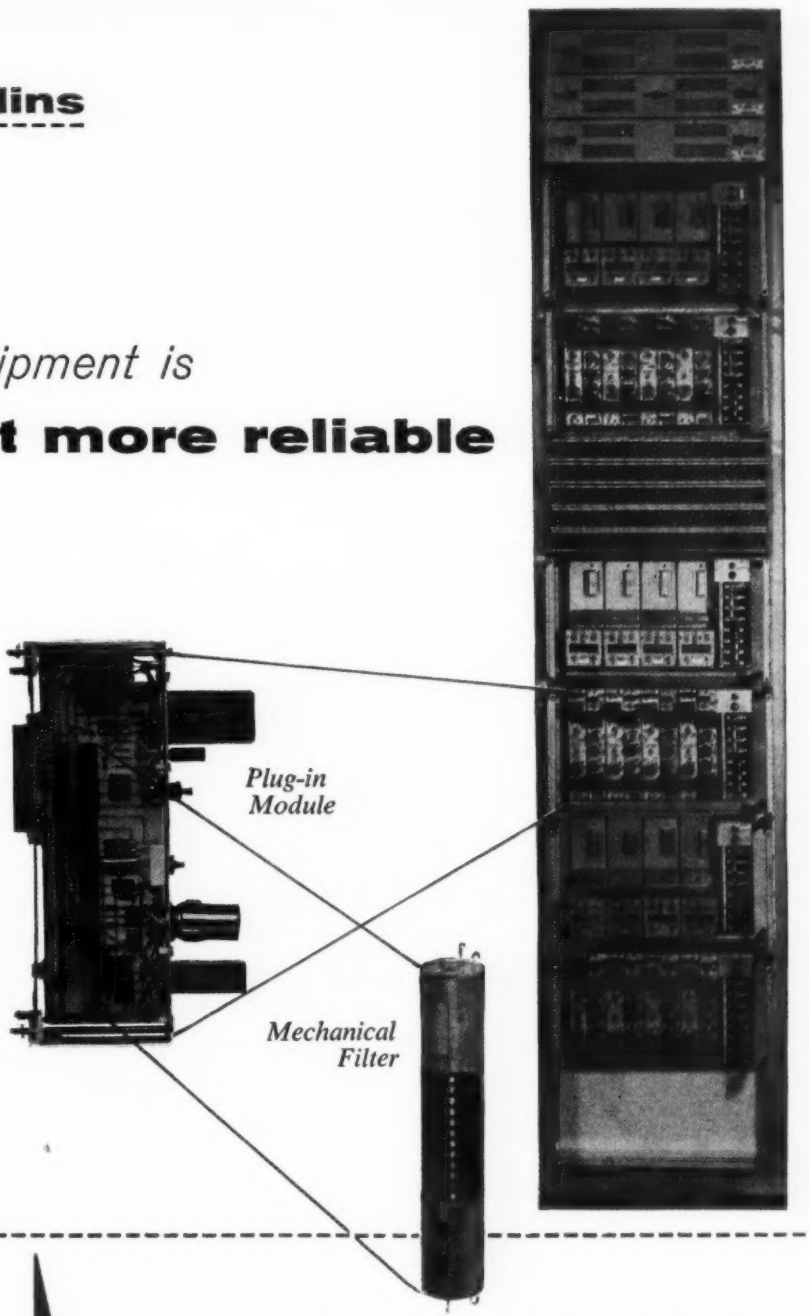
## Exclusive with Collins

*Mechanically Filtered*
*carrier equipment is*

# more compact more reliable

Most carrier equipments use either crystal or high-Q LC filters. To produce LC filters of the selectivity required for high quality performance additional stages of modulation must be provided — an expensive and cumbersome method which subtracts from the reliability of the equipment.

Collins carrier makes use of Mechanical Filters for channel separation. Compact, permanently tuned, and highly selective they greatly increase system reliability, require a minimum of space.




*You get benefits like these in* **Collins** *carrier, too:*

- Complete compatibility with standard telephone carrier frequency assignments.
- Easy maintenance and uniformity through modular construction and printed circuitry, test point on every module.
- Articulated hinges permit back-to-back panel mounting on equipment rack and complete servicing of any shelf from either side of rack.
- Sensing and automatic switchover for all units common to more than one channel.

*Write for new brochure,*
*"Collins RF and Multiplex Systems for the Telephone Industry."*

Collins **CREATIVE LEADER IN COMMUNICATION**

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COLLINS RADIO COMPANY OF CANADA, LTD., 11 Bermondsey Road, Toronto 16, Ontario
COLLINS RADIO COMPANY OF ENGLAND, LTD., 242 London Road, Staines, Middlesex

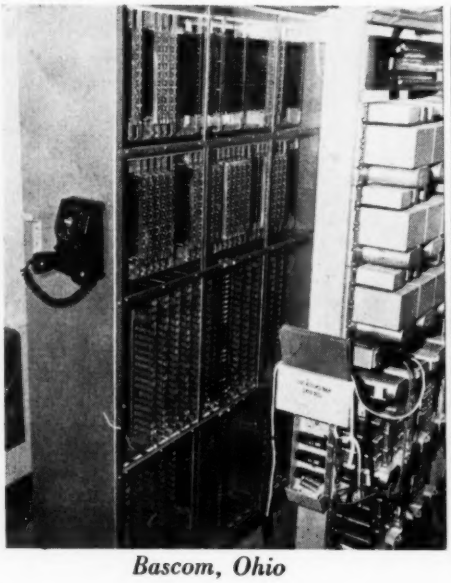
# One fellow tells another...

## that's why there are over 600 LEICH DIAL SYSTEMS in

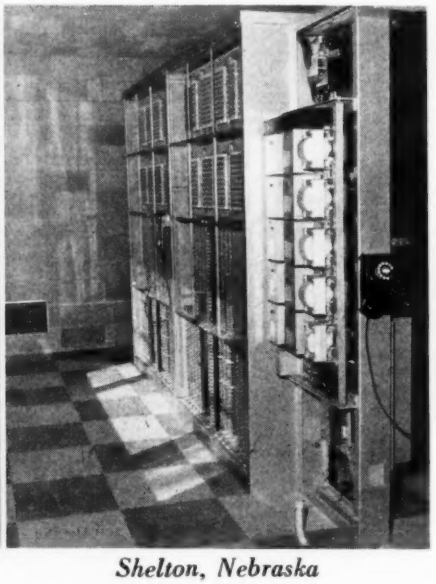
If you plan to purchase a dial switchboard, consider this. The Leich Dial System was introduced on September 28, 1947. Right now, there are over 600 Leich Dial Systems in service.

We, here at Leich, aren't that good as salesmen. It's just that those who had installed Leich Dial Systems had so much good fortune with them that they told their friends about it.

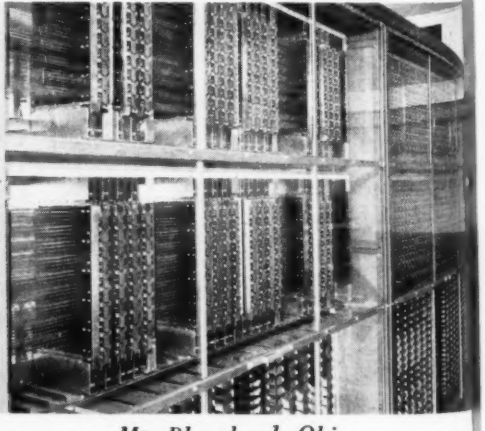
May we suggest that you visit some of the Leich Dial System installations near you. You'll find it interesting and you may get some profitable ideas for your company.



*Bascom, Ohio*



*Shelton, Nebraska*



*Mt. Blanchard, Ohio*

**LEICH**

# ve 600
# M in service –

### MORE DEPENDABLE SERVICE

There are no mechanical moving parts in the Leich Dial System. All the operations are performed by full-size, heavy-duty relays. These relays have been tested for millions of operations without showing signs of wear, without requiring adjustment. Leich Dial System owners are giving fast, reliable telephone service with fewer service interruptions than they ever thought possible.

### JACK-IN LINES AND LINKS

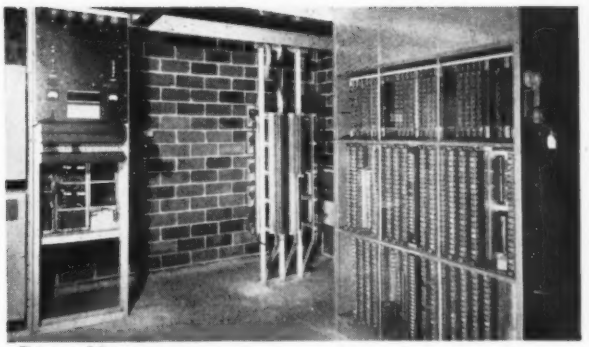
This is a flexible switchboard. Additional lines and links may be jacked-in, with no wiring or soldering, no factory installer needed. Ten lines can be added in ten minutes at a total cost of $175.00.

With this jack-in feature, it is quick and inexpensive to take equipment out of one board and put it in another when traffic conditions warrant it.

### EVERY SERVICE FEATURE

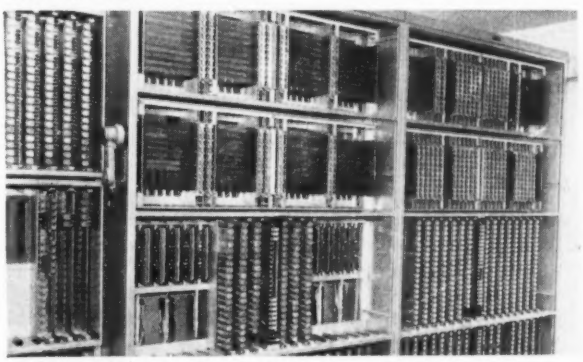
With a Leich Dial System you can offer your customers the latest in modern telephone service. All desirable service features are incorporated in this switchboard and special features can be furnished by the use of inexpensive adapter circuits. Extras available include digit absorbing equipment for 2-letter, 5-numeral numbering, a new, inexpensive intercept arrangement for main and party lines, and a simple, inexpensive fire reporting adapter.

We'll be delighted to tell you more about the Leich Dial System. Write today.

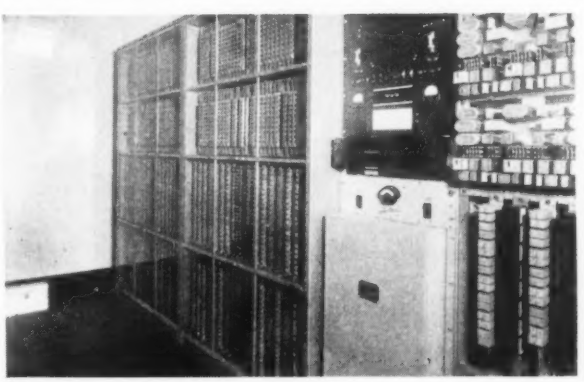


*Rice, Minnesota*

*Sloan, Iowa*



*Fouke, Arkansas*



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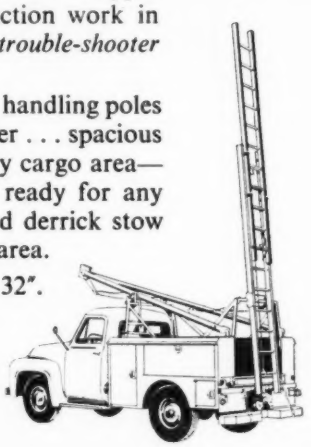

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XUM

# IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

**Covers annual convention of American Bar Association. Public utility law section of ABA discusses subjects of interest to telephone companies. D. C. Power, president of General Telephone Corp., elected chairman of public utility law section.**

YOUR CORRESPONDENT left the sizzling Washington climate for a few days last week for the even more sizzling climate "deep in the heart of Texas." The purpose was to attend and report on the annual convention of the American Bar Association (ABA) and more specifically the sessions of the Section of Public Utility Law.

To the credit of the great and growing city of Dallas, let it be said that the meeting, attended by a record registration of 5,000 lawyers from all over the country, was a most enjoyable success—thanks to the air-conditioned comfort of the modern hotels, restaurants, and other places of assembly in the Texas metropolis. (Editor's Note: Fort Worth papers do not have to copy this stuff.)

While the scheduled program of the Section of Public Utility Law was somewhat on the light side, with reference to discussions of special interest to the telephone industry, the election of a chairman of that section for the forthcoming year will be of considerable interest. The new chairman is Donald C. Power, president of General Telephone Corp., who still retains an active interest and participation as a working member of the legal profession. He succeeded a fellow Ohioan, Ralph M. Besse, vice president and general counsel of The Cleveland Electric Illuminating Co. Mr. Power will preside over the Section of Public Utility Law until the next general meeting of the American Bar Association, which will be held (and this is another precedent for the ABA books) in London, England, July, 1957.

During the meeting on the first day, Stephen H. Fletcher, general counsel of The Chesapeake & Potomac Telephone Companies, Washington, D. C., discussed a matter which is getting an increasing amount of attention among telephone company lawyers. This problem, which has been discussed in this department on several occasions, involves the tendency of local municipalities to impose special taxes on telephone companies, and other utilities. The reason, of course, is the increasing need of municipal governments for more revenues to pay for the greater load being placed upon them by city growth. And since there is a natural and understandable resistance by municipal politicians to increasing, by direct taxes, the load on the local citizens (who must vote to elect them), indirect taxation via the telephone company has a strong appeal. Municipalities and other local taxing districts, since the end of World War II, have seen their expenditures increase at the rate of 10 per cent a year.

Mr. Fletcher pointed out that there are two ways in which municipal authorities can seek to increase their revenues by way of special levies on telephone companies and other public utilities: (1) Increasing franchise payments; and (2) various special taxes, such as gross receipts and other forms of license taxes. Of course, he added, "Eventually the subscribers in the taxing jurisdiction will have to bear the burden of the tax."

The telephone company lawyers' problem arises, however, in the typical situation of a state-wide service area where one municipality imposes a special tax while other municipalities in the same state do not. Since telephone companies, and for the most part other public utilities, as well, base their rate structures on the service area rather than the municipal unit, it is easy to see that the special tax creates a knotty problem of discrimination. If the telephone company seeks to absorb the local tax in its general state-wide operating taxes, the net result would be that subscribers in non-taxing municipalities would have to pay part of the tax (through their bills) for those subscribers living in municipalities which imposed the extra tax. The alternative is, of course, the surcharge on the bills of subscribers *residing in the taxing communities*, and that too can result in misunderstanding and litigation.

Then, there are complications in the case of municipalities imposing different levels of special taxes along this line. Mr. Fletcher outlined the over-all problem as follows:

"If all of the localities in the operating territory of the utility imposed similar taxes at similar rates there is no inequity under the statewide principle since the subscribers in each community are paying the taxes indirectly imposed upon them by the localities in which they live. However, even in such jurisdictions, if the municipalities have unlimited power to impose special taxes on utilities, there will be a temptation to use such power to the disadvantage of subscribers outside their jurisdiction for which they have no responsibility.

"What can a utility do when faced with a threat of a special tax or franchise payment of the sort just discussed? One recourse is a court test of the validity of the tax on the basis that it is excessive or unreasonably discriminatory. However, court decisions in the tax field give one little encouragement in pursuing this avenue. The decision of the municipality is generally held to be conclusive in the determination of the amount and the classification of subjects of taxation.

"A second possible course of action is to seek legislation which would restrict the power of localities to impose

special taxes on utilities. One can readily see that such legislation would be difficult to obtain. It puts the utility in the position of opposing needed municipal school and civic improvement programs. If the step is taken after a municipality has enacted a new tax it means an actual reduction in tax revenues for that particular municipality.

A second hazard in seeking such legislation is that the localities, because of their political influence in the legislature, may succeed in having your bill converted from a tax-narrowing to a tax-broadening bill and you would lose restrictions which may now exist on the taxing power of the locality.

"One possible legislative remedy is to tack on to bills empowering localities to impose taxes a provision enabling the company to pass on the taxes to subscribers in the community imposing the tax. A bill such as this was passed in Illinois last year (Laws of Illinois, 1955, p. 1901). Not only does it authorize the utility to pass on the tax but also to pass on a percentage of the tax to compensate it for the costs of collection."

The Chesapeake and Potomac company counsel went on to discuss another approach to the problem which seems to promise some degree of relief. That is to have the telephone company, or other utility, seek a public service commission order authorizing the company to include in its charges to subscribers an amount to cover any special tax imposed by the municipality in which the subscriber resides. Mr. Fletcher traced the precedent for such action back as far as 1920 and referred to cases pending at the present time in the highest courts of Missouri and Virginia. Since last summer there have been commission decisions authorizing such surcharges in Missouri, Nevada, and Virginia. And the commission order in Missouri has been upheld in a lower state court.

Mr. Fletcher observed that state commissions in the past have uniformly sustained their power to issue tax surcharge orders. In 1951, the rate committee of the National Association of Railroad & Utilities Commissioners submitted a report recommending a surcharge of occupancy taxes, even though it means a departure from uniform rate structure throughout a given utility system. Mr. Fletcher referred to decisions by 11 state commissions and four highest state courts, all upholding the proposition that special local taxes might be taken care of by special surcharges on local utility bills. The state commissions include Alabama, California, Idaho, Michigan, Missouri, Nevada, North Carolina, Oregon, Utah, Virginia, and Washington. The four high court decisions were registered in Illinois (1936) Missouri, Utah, and Washington.

### *Other Utility Legal Problems*

While general in their application to all utility operations there were two other addresses before the ABA public utility law sessions which were worthy of note by telephone company management people. One of these was a discussion of the conflict between zoning laws and the location of utility facilities and structures. This was a scholarly study of this subject by Randall B. Luke of the legal staff of The Cleveland Electric Illuminating Co.

This is essentially a problem of what the lawyers call "conflict of laws." Local zoning and planning authorities insist on the right to restrict the location or construction of structures or facilities of a type which would result in a community or neighborhood property values deteriorating or becoming run down. But public utilities, which also have an obligation to furnish service, cannot always pick their locations for such things as substations, pole lines, etc., in such a way as to avoid conflict with zoning or planning limitations.

The legal question discussed by Mr. Luke tells what or who should be the final authority in settling such disputes. He cited a number of cases culminating with a recent Ohio Supreme Court decision which held that an electric utility in that state was subject to restrictions imposed by a county planning commission in the construction of long-distance transmission lines. Generally speaking, the law is quite vague. There has not been much precedent. But the problem is becoming an increasingly urgent one for many public utilities.

The trouble is that where local zoning or planning authorities have final say so, the utility company is likely to lose out. That is because hearings before such authorities take on the character of town meetings. Irate property owners, intent chiefly on preserving their own investment in residential property show up *en masse*, and give all sorts of reasons why utility facilities ought to be located some place else. Of course they insist that the utility company continue to render service, and good service, and agree that the service facilities have to be located some place. But they generally find good reasons for not wanting them anywhere around their neighborhood.

In the questioning that followed Mr. Luke's address, reference was made to the practice in Pennsylvania—which seems to be working out satisfactorily. This is to leave the whole thing in the lap of the public service commission. This removes the dispute from the locality involved, to a state capital in a calmer atmosphere more conducive to a disinterested and impartial judgment. In such commission proceedings the property owners and zoning authorities still have their opportunity to be heard and give good reasons why proposed utility structures should not be located in certain areas. But there is also reserved to the commission the right to make a final judgment in the over-all public interest.

The other interesting paper before the public utility law session was written by Prof. George L. Haskins of the University of Pennsylvania School of Law. He addressed himself to the problem of state taxes which create an oppressive burden on interstate utilities. While most of his discussion dealt with railroads and air lines which get soaked unmercifully by taxes in the state of their own domicile, he did touch on this problem as it might affect telephone companies.

It seems that back in 1936, in a case involving the Pacific Telephone & Telegraph Co. (297 US 403), the U. S. Supreme Court held that if the over-all business of an interstate carrier is profitable, a state tax on the intrastate part of business will not be stricken down under the due process or commerce clauses merely because it causes, or increases, a deficit operation which must be paid for out of earnings in other states.

Professor Haskins stated:

"It seems not to have been fully appreciated, however, that public utilities are in a different position from other types of interstate businesses in that to a very large extent they are prohibited from abandoning their intrastate operations without approval of at least a state regulatory body, or without abandoning their interstate business as well, and this is notably true with respect to interstate carriers.

"Moreover, increased rates are difficult to obtain, and they, too, are within the purview of regulatory bodies. The relevance of these characteristics of utilities was recognized in the *Pacific Telephone case* just referred to. There the telephone company, the Great Northern and the Northern Pacific railways, which were foreign corporations doing intrastate and interstate business, relied on an alleged rule that an occupation tax upon the local business of a foreign corporation is void unless the corporation is free in law and in fact to withdraw therefrom without discontinuing its interstate business. The court apparently recognized this rule of law, but said that if the local business is conducted at an apparent loss, 'no reason has been suggested why a tax upon the local business should be held void . . . if, although conducted at an apparent loss, the corporation desires to continue it because of benefits present or prospective.' In the course of the opinion, Mr.

*(Please turn to page 35)*

# REA Approves Six Telephone Loans Totaling $1,033,000

The U. S. Department of Agriculture on Aug. 28 announced six loans totaling $1,033,000 made by the Rural Electrification Administration to improve and expand telephone service in rural areas of Indiana, Tennessee, Georgia and Minnesota. Details follow:

Smithville Telephone Co., Ellettsville, Ind., on Aug. 20 was allocated $355,000, its fourth REA loan.

The borrower plans to acquire the stock of the Star Telephone Co. of French Lick, which provides common battery service to 644 subscribers. The borrower expects to provide dial service to these subscribers and to 488 additional subscribers in Orange County.

The four REA loans to the Smithville company total $1,265,000. These funds will enable the company to provide improved service to 2,433 present subscribers, and to bring initial service to approximately 2,362 new subscribers over 651 miles of new or rebuilt line.

The area to be served includes portions of Greene, Monroe, Morgan, Orange and Owen counties. The new service already benefits 1,860 subscribers through new automatic central offices at Ellettsville, Gosport, Smithville and Stanford.

Byron A. Draper is president and manager of the Smithville company.

*

Ohio Valley Telephone Corp., Edwardsport, Ind., also on Aug. 20 was authorized to borrow $73,000, the company's first REA loan.

The borrower, a commercial corporation, plans to serve 236 rural subscribers in its area, including 36 now without telephones.

The Ohio Valley company now provides magneto service for 202 subscribers over 21 miles of line. It proposes to convert the existing system to automatic, construct 4 miles of new line, and rebuild practically all of the existing line. An automatic central office building is under way at Edwardsport.

E. S. Welch is president of the corporation.

*

Parsons (Tenn.) Telephone Co., Inc., on Aug. 20 received an allocation of $193,000, its third loan.

The borrower plans to use these funds, together with a previous loan of $417,000 to provide improved service to 1,353 subscribers in portions of Perry, Henderson and Decatur counties.

The new loan will enable the borrower to construct an automatic central office at Scotts Hill, to construct 77 miles of new line and rebuild 38 miles of existing line. This will serve 402 subscribers not provided for in the earlier loan. This includes 234 rural establishments now receiving magneto service from facilities of the Peoples Telephone Co., Scotts Hill, and the Decaturville Mutual Telephone Co., properties of which the borrower proposes to acquire.

The expanded facilities financed by the two loans totaling $610,000 will provide initial service for 750 subscribers now without telephones and improved service for 603 existing subscribers.

The new loan is the third approved to the borrower. The first of these, made in July 1951 in the amount of $239,000, was rescinded. Another loan for $417,000 was approved in December 1955.

Mr. T. D. Odle is president of the Parsons Telephone company.

*

Planters Rural Telephone Cooperative, Millen, Ga., also on Aug. 20 secured allocation of $147,000, its third loan.

The borrower plans to use the loan, together with prior loans amounting to $565,000, to complete facilities to serve 1,197 rural subscribers over 530 miles of line in Effingham and Screven counties. Additional facilities required include 89 miles of line. The borrower is planning to construct a commercial office in the town of Newington.

At present, the cooperative has in operation new automatic central offices at Guytown, Woodcliff, Hilltonia, Newington and Doublehead which are serving 683 subscribers.

Walter Harrison is president of the cooperative.

*

Runestone Telephone Association, Hoffman, Minn., on Aug. 23 gained approval of its third REA loan, this one for $121,000.

The borrower proposes to extend its operating area into Douglas and Pope counties where it will provide improved service to 259 rural subscribers. This includes 59 rural families now without telephone service.

As a nucleus for the new service, the Runestone association plans to acquire properties of the Kensington Telephone Co., now furnishing magneto service to 200 subscribers over 73 miles of line. New facilities planned by the borrower include an automatic central office in Kensington, and 16 miles of line. It proposes to rebuild practically all of the existing line.

REA loans to Runestone now total $611,000. They will enable the association to bring new and improved service to 1,129 rural subscribers in Douglas, Grant, Pope and Stevens counties.

The completed system will consist of 422 miles of line and four exchange areas. Exchanges in operation are located at Barrett, Donnelly and Hoffman.

Mr. N. F. Nelson is president and Mr. W. Berdell Skogstad is manager.

*

Northland Consolidated Telephones, Inc., Twig, Minn., on Aug. 23 was authorized to borrow $144,000, revised first and second loan, to improve service in St. Louis County.

The company will use this loan, together with an earlier REA loan of $271,000 and its own equity funds, to provide dial service to 694 rural subscribers. Of this total, 127 do not now have telephone service and 567 are existing subscribers and switchers served by the borrower or by systems which the borrower expects to acquire.

Properties which the company proposes to acquire are those of the Meadowlands Telephone Co., now providing dial service to 149 subscribers and 52 switchers; Brookston Telephone Co., serving 61 subscribers from a magneto exchange; the Township of Kelsey Telephone Co., a municipally owned system serving 49 subscribers from its magneto central office at Kelsey; and the Township of Toivola Telephone Company, another municipally

*(Please turn to page 38)*

# Minnesota Companies Adopt Pension Plan

***State association sponsors master program through which smaller companies can economically offer employes retirement benefits.***

By KEITH W. VOGT

THE ONLY REASON an association exists is to provide service to its members. I was reminded of this fact in December, 1954, by Herbert W. Jacobsen and Robert W. Johnson. They approached me with an idea for a pension plan for our association that was entirely different from any other plan we had previously considered.

I had been familiar with the tremendous increase in employe welfare plans of all kinds in recent years. We of the Minnesota Telephone Association have felt for some time that it would be advantageous for our members, particularly the smaller companies, to make some benefits available to them through their membership in the association.

Larger corporations throughout the country have for years been aware of and have taken advantage of the various forms of so-called fringe benefits for their employes. For example, on investigating, we found that in 1940 about 660 corporations had private retirement plans for their employes. By 1950, the number of plans had increased to 13,000 and by 1955 the total was 28,000. While the great majority of large corporations had some sort of retirement plan for all or part of their employes by 1955, there were still approximately 30,000 smaller and medium-sized firms which still did not have such plans.

Generally speaking, this situation applies also to the telephone industry. The larger companies do have retirement plans; the smaller companies, for the most part, do not. A small company certainly stands to benefit as much or more from a retirement plan as does a large company. Why, then, do so few small companies, proportionately, have plans? I believe the answer to this, at least in the telephone industry, is quite evident.

All kinds of employe welfare plans, and particularly pension plans, are technical in nature and require the help of a specialist in the field if they are to be set up and installed properly. Companies which are located near the larger metropolitan areas have not found it difficult to enlist the aid of experienced specialists in setting up their plans. The smaller Independent telephone companies, on the other hand, have in the past found it difficult, or impossible, to get someone with experience and know-how to work with them in setting up a plan designed for the particular needs of their company. Also, because of their size, the same benefits that were available to large companies were not available to them.

Having investigated the possibility of an association sponsored pension plan before, I recognized that the plan outlined to me by Mr. Johnson and Mr. Jacobsen had a great amount of merit. Both of these men had had considerable experience in the pension field. Mr. Johnson, in addition to being a tax attorney, had had experience in the pension field with one of the largest industrial corporations in Minnesota prior to his establishing the firm of Retirement Plans, Inc. Mr. Jacobsen had had several years of experience as an insurance actuary, specializing in the field of group retirement plans prior to his association with Retirement Plans, Inc.

After several discussions, we agreed that it would be a good idea to contact each member of the board of directors of the Minnesota association in order to outline the plan to them. More than 2,000 miles were traveled in order to give each board member a complete picture of how the proposed plan would benefit the association.

A complete outline of the plan was presented at our board of directors meeting in February, 1955. Recognizing the fact that a soundly designed pension plan would be a great asset to the association, but also realizing the great responsibility of the association in sponsoring such a plan, a Pension Committee was appointed to investigate more fully the proposed plan and any other plans which might be available.

This committee consisted of Charles Cashel of Worthington, chairman; John Holland of New Ulm; Paul Glaeser of Springfield; J. F. Eitzen of Mountain Lake, and Dell Ludenia of Osakis. I was also included as an ex-officio member. The members of this committee did a tremendous amount of work over the next several months in analyzing the various plans that were presented. The committee accepted the recommendations of Mr. Johnson and Mr. Jacobsen as to certain basic features that any association sponsored pension plan must have in order to be successful. The requirements that were agreed upon were:

*The Plan Should be as Simple as Possible.* This is necessary so that the plan can be understood by the great majority of the association members who have no previous experience with pension plans.

*No Financial Obligation on the Part of the Association.* The cost of the plan should be borne by those members who adopt it.

*The Plan Should be Flexible.* We felt that it was impossible to find any one plan that would fulfill the needs of each of our members. Therefore, any plan we sponsored must be flexible in its provisions regarding eligibility requirements, amounts of pension, etc. In this way, each company could have the plan set up to fit its own individual needs.

Mr. Vogt is secretary-treasurer of the Minnesota Telephone Association.

*The Plan Should be Insured.* After considering both insured and non-insured types of pension plans, we came to the conclusion that the insured plan would be far better in our situation. While the subject would be too lengthy to go into in detail here, the principal advantages we found insured plans to have were:

(1) Guarantee of principal and interest rates. This is of particular importance where many small companies are involved.

(2) Guarantee of annuity rates, which is important because of the trend toward greater longevity of pensioned employes.

(3) Life insurance could be included or excluded at the option of the individual company. This was also true of disability income coverage.

(4) No outside fees would be charged for actuarial, legal, and investment services. The insurance company's premiums automatically include these services, thereby relieving the association itself of any financial obligations. Because the cost of an insured plan is definitely determinable in advance of actually installing the plan, the Minnesota commission will accept such cost figures as allowable costs in rate determination cases in advance of actual installation of the plan.

*The Plan Should be Set up on a Group Basis,* for the small companies as well as the large. This results in several advantages. Among these are:

(1) Lower cost.

(2) More liberal underwriting of insurance benefits.

(3) More flexible methods of premium payments.

(4) Eliminates need for a trust agreement.

*Members Must be Provided with Individual Personal Consulting Service.* Since a pension plan is of such a specialized and technical nature, it was required that the insurance agents or brokers who handled the plan must be willing and able to provide each of our members with all personal help necessary to install his plan. Also, they would have to assist the members in getting their plans qualified with the Bureau of Internal Revenue and would have to administer the plans in the future.

Retirement Plans, Inc., was delegated the task of checking with those insurance companies who are leaders in the pension field. The above listed requirements were presented to 19 insurance companies. Most of the companies objected to providing the required flexibility if the plan was to be set up on a group basis. In addition, some companies felt that because of the nature of the telephone industry, there was additional underwriting risk for which they would require higher premiums.

In April, 1955, the Minnesota Mutual Life Insurance Co. of St. Paul submitted to the committee a proposal which met with their requirements in every detail. Two of the members of the committee had pension plans in effect previously in their own company. The costs of the proposed plan were compared with the plans already in effect and were found to be lower.

In May, 1955, the committee held its final meeting and decided unanimously to recommend the plan submitted by the Minnesota Mutual Life Insurance Co. for sponsorship by the association. This recommendation was made to the association's board of directors at its regular meeting in September. In addition it was recommended that the plan should be presented at each of the association's regional meetings held throughout Minnesota.

Talks were given by Mr. Johnson at each of the regional meetings. He outlined the tax advantages possible through a pension plan and discussed in detail the provisions of the proposed Minnesota Telephone Association pension plan.

Many of the members were unaware that, while a company's cost under a qualified pension plan is an allowable business expense for tax purposes, the premiums paid for each employe need not be declared as income by the employe. The employe pays no tax at all until he actually commences to receive retirement income.

In September, 1955, the association's Pension Committee's recommendation was presented to the board of directors and was passed unanimously. It soon became evident that the real work of Retirement Plans, Inc., had only begun upon adoption of the plan. During the next few months cost figures were prepared for each company which asked for them. Personal calls were also made on each of these companies to explain the plan and cost figures in detail.

It is now less than a year since we formally adopted the plan. It has had an excellent acceptance by the members. Several companies have already installed their plans and a large number of the companies have requested specific cost and benefit figures for their particular applications, and are incorporating these figures into their costs, to be used in their rate hearing. Generally, the practice has been to wait until after a rate adjustment before actually installing the plan.

After seeing the plan in operation for several months it is our conclusion that it has proved very successful. We feel that it is now, and will continue to be, a distinct asset to the Minnesota Telephone Association and to our members, and will, over a period of time, give stability to member companies' employment and will encourage young qualified men and women to seek employment within our industry.

Inasmuch as we have received many requests for copies of our association's pension plan booklet, we are presenting below the text of the booklet so those who are interested in pension plans will have more detailed information on the Minnesota association plan. The text follows:

### Introduction

The Minnesota Telephone Association Pension Plan outlined in this booklet has been carefully designed to meet the needs of the telephone industry within reasonable cost limits. The benefits offered to your employes are broad and generous. The plan is simple, flexible and easy to administer.

Each of your employes is constantly confronted with three personal and vital problems which can change the amount of income needed by and available to him and his family. This plan provides an answer to each of these three problems.

*Death:* About one out of every three of your employes living at age 35 will die before reaching age 65, but his family will still need a monthly income. In these cases this plan will provide a family income.

*Total and Permanent Disability:* An employe may become so totally and permanently disabled that he cannot continue to work, but he and his family will still need a monthly income. In these cases the plan will provide a total and permanent disability income.

*Old Age:* If an employe does not die or become totally and permanently disabled, it is inevitable that he will have to stop work at some time on account of old age. However, he and his family will still need a monthly income. In these cases the plan will provide a retirement income.

### Suggested Provisions of Plan

Following are merely the suggested provisions of the plan as it is felt they will apply to most companies in the association. These provisions may be changed for any company where it appears to be desirable.

*Eligibility.* Each permanent employe would become eligible upon completion of three full years of service provided he is then age 30 or over. Employes age 66 and over who have completed three full years of service may be included in or excluded from the plan at the discretion of each individual company. Temporary or part-time employes will not be eligible.

*Normal Retirement Income.* The

amount of monthly retirement income available at retirement will be determined by means of a formula. It is recommended that the formula be a function of both salary and length of service. Recognizing the fact that a proper formula for one company may not be entirely satisfactory when applied to a different company, three suggested formulas are outlined below. These suggested formulas are designed so that they should fit quite closely to the different needs of the many member companies of the association. These formulas are:

*Plan A:* The normal retirement income would be equal to ½ of 1 per cent of salary for each year of past service, plus ¾ of 1 per cent of salary for each year of future service.

This formula appears to give more weight to future service. Actually, since salaries generally increase with years of service, and since present salaries are used in determining the past service pension, the lower percentage for past service has the effect of giving approximately equal weight to both past and future service.

*Plan B:* The normal retirement income would be equal to ½ of 1 per cent of salary for each year of past service, plus ½ of 1 per cent of salary for each year of future service.

*Plan C:* The normal retirement income would be equal to 1 per cent of salary for each year of future service. No credit is given for past service.

Under any of the above plans, when salary increases sufficiently to provide $5.00 or more of additional retirement income by the future service portion of the formula, such additional retirement income will be issued on the following plan anniversary.

*Example:* The following table illustrates amounts of retirement income for three participants, one age 30, one age 45, and one age 60, each with a salary of $300 monthly. It is assumed that each of these employes started working at age 30.

| Age | Past Serv. | Monthly Salary | Monthly Retirement Income Plan A | Plan B | Plan C |
|---|---|---|---|---|---|
| 30 | 0 | $300 | $78.75 | $52.50 | $105.00 |
| 45 | 15 | 300 | 67.50 | 52.50 | 60.00 |
| 60 | 30 | 300 | 56.25 | 52.50 | 15.00 |

*Normal and Optional Forms of Retirement Income.* It is recommended that the plan be set up so that the payment of the income to a retired employe be guaranteed for a minimum period of 10 years and as much longer as the retired employe may live.

*Other Retirement Options.* The retirement income guaranteed for a minimum period of 10 years and life thereafter would be regarded as normal. There are several other similar options available, the amount of the retirement income varying accordingly. The income may be guaranteed for zero, five, 15, or 20 years and life. The employe may select a monthly income which will be paid as long as either he or his wife may live.

*Normal Retirement Age.* For employes entering the plan at age 55 or under, normal retirement age shall be 65. For employes entering the plan over age 55, normal retirement age shall be 10 years after entry into the plan, but not over age 70.

*Early Retirement:* Each employe will have the right, with approval by his employer, to retire earlier than normal retirement age, subject to a mathematical reduction of his retirement income.

*Late Retirement:* Each employe will have the right, with approval by his employer, to defer his retirement for successive periods of one year each.

*Death Benefit Before Retirement.* If an employe dies before normal retirement age, the amount of the retirement income which he would have received will be paid to his beneficiary as a family income, commencing immediately and continuing for a period of nine years and two months.

*Example:* An employe is eligible for a retirement income of $75 a month if he had lived. Commencing immediately upon his death, his beneficiary will receive a family income of $75 a month for nine years and two months, a total of $8,250.

*Death Benefit After Retirement.* The retirement income on the normal form (assuming the employe does not choose an optional form) is guaranteed for 10 years and as much longer as the retired employe may live. If an employe dies within the first 10 years following retirement, his retirement income will be paid to his beneficiary as a family income and will continue for the remainder of the 10-year period.

*Example:* An employe retires with a retirement income of $75 a month. He dies at the end of one year after having received 12 monthly payments of $75 each, or a total of $900. His beneficiary will continue to receive a family income of $75 a month for the next nine years, or a total of $8,100. Thus, the employe and his beneficiary together are guaranteed a minimum of $9,000.

*Total and Permanent Disability Income.* If an employe becomes totally and permanently disabled, an amount equal to his retirement income will be paid to him as a total and permanent disability income commencing immediately and continuing for a period of nine years and two months. If the disabled employe should die within that period of nine years and two months, the same amount will continue to be paid to his beneficiary as family income for the remainder of the period.

*Example:* An employe would have received retirement income of $75 a month at age 65. He becomes totally and permanently disabled and receives total and permanent disability income of $75 a month, commencing immediately. He dies at the end of five years, having received 60 monthly payments of $75 each, or a total of $4,500. His beneficiary will continue to receive $75 a month as family income for the next four years and two months, or a total of $3,750. Thus, the employe and his beneficiary are guaranteed a minimum of $8,250.

*Vesting of Ownership in Employes.* Ownership of the income contracts will be completely vested in the individual employes in the event of death, total and permanent disability or old age.

*Benefit to Employe Upon Termination of Employment:* In the event of termination of employment, each employe will receive a paid-up retirement income contract for such amount as may be purchased by his vested interest in the original contract in accordance with the following schedule:

| Years of Service | Ratio | Years of Service | Ratio |
|---|---|---|---|
| 5 | 25% | 13 | 65% |
| 6 | 30 | 14 | 70 |
| 7 | 35 | 15 | 75 |
| 8 | 40 | 16 | 80 |
| 9 | 45 | 17 | 85 |
| 10 | 50 | 18 | 90 |
| 11 | 55 | 19 | 95 |
| 12 | 60 | 20 | 100 |

If the employer desires, the terminating employe may be allowed to take his vested interest in a lump cash payment instead of in the form of paid-up retirement income.

*Benefit to Employer Upon Termination of Employment:* In the event of termination of employment, the difference between the employe's vested interest and 100 per cent of the cash value of the original retirement income contract will be used as a credit to the employer to offset future premiums for those employes who remain in the service of that particular employer.

*Benefit to Employes upon Termination of Entire Plan:* If an employe pension plan adopted by an employer

*(Please turn to page 36)*

# THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

WE HAVE the following letter from Mr. A. E. Lomas, telecommunication engineer for the Gray Manufacturing Co., Hartford, Connecticut:

"I was very interested in your comments (TELEPHONY, June 23) on the subject of a PBX without an operator to receive incoming calls. I feel sure it will interest you to know that seven such PBX's were put into service prior to 1940 in Bombay, India, by the late Bombay Telephone Co., Ltd.

"The first unit was at Government House in November 1931. The equipment comprised line apparatus, connectors and both-way junction relay sets. The three initial digits of the telephone number were set up in the main exchange and the last two digits on the PBX connector.

"Outside calls were set up by prefixing "O" and the last two digits were used to obtain a local call. The particular department or individual telephone number was listed in the directory as a full five-digit number. This arrangement worked very satisfactorily, but one realizes that it cannot be applied to all PBX installations."

Perhaps not this particular arrangement, but we firmly believe that some form of inward dialing can be used on all PBX installations.

It must be admitted, however, that many small PBX systems are designed to provide secretarial service and inward dialing would in these cases probably not prove desirable.

We were advised by an engineer friend recently that it is estimated that if inward dialing was provided on all large PBX systems in this country, the saving would amount to about 80 million dollars per annum.

•

The Chesapeake & Potomac Telephone Co. of Washington, D. C. advertises the fact that if you care to hear how a machine can answer the telephone just dial FEderal 3-9941. Dial that number and a pleasant feminine voice explains that the telephone answering device is answering your call.

The operation of the equipment is explained clearly and it is suggested that you give your name and telephone number and that full particulars as to how this equipment may be installed on your line will be furnished the next day. This is certainly a good form of advertising for any telephone company.

•

A small hand-operated sprayer is now available for use in spot leak testing of cable. This device is small and weighs only 16 ounces, yet it contains enough chemical-type leak detector to test 30 or more splices. The wide spray covers all sizes of cable or splices.

The device is simple to use. It is necessary to make certain that the cable to be tested is under the recommended pressure of 5 pounds.

Spray the splice or other surface to be tested. Leaks will form bubble clusters that build up for several minutes, making detection sure and simple.

•

We have a letter from Howard F. Van Zandt, formerly with Kellogg Switchboard & Supply Co., and now representative for IT&T in the Far East, stating that he continues to enjoy reading TELEPHONY in that far country.

He also promises to act as our guide if we will visit Japan. Certainly nothing would please us more and we may just do that one of these days.

•

Fibreglass tree pruner poles are proving extremely popular in the utility field. They are extremely strong, having twice the strength of wood and are practically unbreakable. They are also as safe as glass as an insulator. They have extremely high dialectric and do not absorb moisture.

•

We travelled by National Airlines from Pittsburgh to Washington, D.C. only a few days after the two big airliners crashed in Grand Canyon killing all aboard. The pilot announced that we would fly at an altitude of 12,000 feet when we left Pittsburgh, but after about 15 minutes we ran into heavy clouds and started a sharp climb and soon came out into the sunshine at probably 18,000 feet. This was a climb similar to that made by the United Airlines plane when it ran into the TWA plane at Grand Canyon and several of the passengers on our flight noted the

### Blain Named Technical Editorial Director

**The editor of TELEPHONY takes great pleasure in announcing that Ray Blain has been named Technical Editorial Director of this publication.**

**This appointment has been made in appreciation of Mr. Blain's long, efficient and loyal service as Technical Editor and because the new title more fully reflects the duties and responsibilities which he has performed during the more than 15 years he has been associated with TELEPHONY.**

**Mr. Blain was named Technical Editor on Feb. 1, 1941, and since then he has not only written the popular columns—"The Plant Man's Notebook" and "Plant Man's Quiz"—and many feature articles, but he has been responsible for obtaining or passing upon the many outstanding technical and plant articles published in TELEPHONY, as well as helping shape the editorial policies which have guided this publication.**

**Watch For This New TELEPHONY Feature**

**In line with its long-established policy of bringing to its readers articles and discussions on new and up-to-date developments and techniques in the telephone art, TELEPHONY soon will publish the first installment of its new ELECTRONICS SECTION.**

**Electronics has already had a great influence on the design of telephone equipment and apparatus, and it will have still a greater and more definite influence in the future telephone plant.**

**In order to help our readers to gain an understanding of the fundamentals of electronics and their application in the telephone field, we will present, in the last issue of every month, our new ELECTRONICS SECTION, treating this important subject in down-to-earth and simplified discussions.**

**Watch for the first installment in a near future issue.**

action and made mention of it. None appeared nervous, however, as National has all its planes equipped with radar so that they can detect any nearby object. This appears to be a great idea and undoubtedly some day all passenger-carrying aircraft will be similarly equipped.

A newspaper suggests that parents take no chances that the baby sitter will be unable to find the emergency telephone numbers left for her. It proposed that the list of numbers be attached to the telephone with cellophane tape.

We hope that some day telephones will all be equipped with an attractive holder for emergency numbers.

Often, when an emergency occurs, seconds mean the difference between life and death, and valuable time should not be wasted looking up telephone numbers.

Operators are always helpful, we freely admit, but having the number to call will always save precious seconds.

•

We've received recently a fine letter from our long-time friend, Lt. Col. John Patrick Moran, U. S. Air Force, Retired. Pat is now with the Bell Telephone Laboratories at Whippany, N. J., busy and happy. Before entering military service, he worked for the New England Telephone & Telegraph Co.

# Plant Man's QUIZ

By RAY BLAIN, Technical Editorial Director

**Q. We'd like to know if you consider battery-fed (kick coils) satisfactory in the provision of common battery service on a magneto switchboard. How many stations and lines can be successfully served from a battery of 16 dry cells (24 volts) before an extra series would be required? What type of storage battery is recommended in lieu of dry cells? Would two 12-volt automobile-type storage batteries connected in series and equipped with a trickle charger prove practical for an installation of this type? How many lines could be served from this type of installation?**

A. The kick coil type of service is possible and generally proves successful with any standard type of magneto switchboard. Usually this service is recommended for single-party town lines.

One manufacturer recommends the use of a 22-volt battery with their particular type repeating coil.

One set of dry cells used with one line of medium length will last about one year. When two lines of medium length are connected, the dry cell battery should last about five months. When more than two lines are connected, the use of storage batteries is recommended.

One manufacturer recommends the use of 11 cells of type CTMH-2 storage batteries and a No. RCR-1066 recticharger or their equivalent. This equipment is recommended for use on as many as 20 lines. The two 12-volt automobile-type storage batteries connected in series and a suitable rectifier should prove satisfactory.

We believe, however, that you will not require more than a 22-volt battery. The rectifier should be of the telephone type in order that the battery will not be noisy while charging.

The most important point to consider when using this system is the selection of the proper type of repeating coil. This coil should provide efficient ring-through and talk-through features so that good transmission is provided.

For town use, the Stromberg-Carlson No. 11-A repeating coil may be used satisfactorily with a series non-inductive resistance of 80 to 100 ohms. This resistance coil should be connected in series with one of the line windings and the ungrounded side of the battery to limit the transmitter current. The Stromberg-Carlson No. 11-H resistance will prove suitable for this purpose.

When used on short lines, the two 50-ohm windings of this coil should be series-connected; but on lines of medium length, only one winding of 50 ohms is required. On long lines, the resistance coil may be omitted entirely.

•

**Q. What is considered the best color for safety hats to be worn by telephone linemen?**

A. In our opinion, the color is not important. We understand though that the most popular color voted by electrical workers is bright yellow, with white running second. The light colors are cooler in the summertime as they deflect the sun's rays while the darker shades absorb the heat. Safety hats may be provided with a phosphorescent finish which glows in the dark. If this hat is exposed to daylight or artificial light it will glow in the dark for eight hours.

•

**Q. Will it be possible to make use of a recorder-announcer instead of an intercept operator on a medium sized automatic switching system?**

A. Magnetic announcers now available provide an effective and economical method of handling all intercept calls on any automatic exchange. A verbal message that has been clearly announced as a recording so that the subscribers will recognize it as such may be substituted for both the costly method of operator intercept and the method of employing special tones which often are misunderstood. The magnetic announcer provides "operator" assistance to dial subscribers in a manner which builds good relations at a very low cost.

**Cities find telephonic emergency alarm systems more efficient and economical**

# Whittier, Cal. Cuts New Setup Into Operation

THE INFLUX of approximately 135 southern California fire chiefs, city administrators, city officials, representatives of General Telephone Co. and other telephone companies to the city of Whittier, marked the installation of a new emergency alarm system by General Telephone Co. of California recently. This is the first system of its kind in California and one of a very few in the United States.

Acquisition of the new telephone alarm system is a result of Whittier Fire Chief A. B. Alford's insistence during the past several years that the city should have only the best and most modern system available.

In 1948 the Board of Fire Underwriters of the Pacific recommended a telegraphic alarm system following its study of the Whittier Fire Department setup. The lowest bid received by the city for such a system was about $45,000, not including the continuing cost of maintenance. Mr. Alford figured that maintenance would require the full-time services of an electrician.

In 1950, Mr. Alford conducted a survey of several cities having the telegraphic type of alarm system (the only type approved at that time) which showed that only a small percentage of fire reports originated at the "pull-the-lever" type boxes.

He became interested in reports that several cities in the nation, seeking a more modern and useful emergency reporting method, were considering the use of the telephone rather than the telegraph type, and that Roanoke, Va., had been using a telephone system successfully since 1947.

He followed closely the development of such a system for Miami, Fla., which became operative in 1953.

Mr. Alford's studies convinced him that Whittier's needs could best be met by use of the new and modern telephone emergency reporting system, and upon his recommendation the system was adopted.

The telephone emergency reporting system was tailor-made for Whittier by General Telephone Co. and will be maintained by that company. Initially it will be used primarily for transmitting emergency calls for fire apparatus, but may also be used to request police service and to report accidents and other emergency situations.

The system consists of telephone instruments installed at strategic locations adjacent to traffic signals in waterproof boxes mounted on pedestals or posts. Each instrument is connected by a separate circuit directly to a switchboard located at fire department headquarters.

These circuits are kept under continuous test, and visual trouble signals instantly alert the dispatcher if any individual box or circuit is out of order. If a box or circuit becomes inoperative, the rest of the system is not affected.

The moment a caller lifts the hand unit from the hook to report an emergency, a light flashes on the switchboard at fire headquarters indicating the location of the call box, and an audible signal operates until the dispatcher answers the call.

The caller then can report the emergency and pinpoint the location. If, for any reason, the calling person does not, or cannot, give the exact location and details of the emergency, designation strips above the light instantly give the dispatcher the location of the box.

Any number of calls from any number of boxes can be received simultaneously at the switchboard.

Some of the advantages of Whittier's new system are:

*(Please turn to page 37)*

**Mayor A. C. Newsom of Whittier, Cal. cuts ribbon to open new telephonic emergency alarm system, installed by General Telephone Co. Watching (l. to r.) are General's L. A. Brundige, Whittier Fire Chief A. B. Alford, Dean Barnes and A. G. Cooley, of General.**

# THE Operator's Corner

By MAYME WORKMAN — TRAFFIC EDITOR

WHEN WE CRITICIZE a customer's use of the telephone, I often wonder what our score would be if we were to study our own use of the telephone. It would be expected that our telephone manners and proper use of the telephone would be better than the average customer's, due to our training. Let's make a test and see.

Listed below are 20 questions. For each "Yes" answer give yourself five points. For each "Sometimes," two points. No score for a "No" answer.

90 to 100 is excellent; 80 to 89 is good; 70 to 79 is fair and below 70 is unsatisfactory.

(1) Do you know the number?
(2) Allow time to answer.
(3) Ask if convenient to talk.
(4) Speak in a natural tone.
(5) Speak directly into transmitter.
(6) Visualize the person.
(7) Say "Thank you" and "You're welcome."
(8) Listen attentively.
(9) Use the customer's name.
(10) Apologize for mistakes.
(11) Explain waits.
(12) Answer promptly.
(13) Greet the caller pleasantly.
(14) Identify yourself properly.
(15) Leave word where you are going.
(16) Ask questions tactfully.
(17) Take the message.
(18) Signal the operator slowly.
(19) End the call properly.
(20) Replace the receiver gently.

The foregoing questions are also applicable to PBX operators or for any person who has occasion to use the telephone in his or her place of business. They apply to employers and employes alike.

Let's analyze a few of the questions. Number one, for example. It is so easy for a person to depend upon memory in calling or dialing a telephone number, or to transpose a number—such as calling 2178 when the desired number is 2781. Careless dialing also results in reaching a wrong number. Not all people are affable when they are called in error and a large percentage of people fail to apologize when they reach a wrong number.

It is important to allow sufficient time for the called person to answer. Some people have physical handicaps which retard them in answering the telephone. Others are careless in answering their telephones promptly. At least one minute should be allowed for the called person to answer, and longer if you know the called person has difficulty in answering his telephone.

An offense of which many people are guilty is failure to ask if it is convenient for the called person to talk. For example, a business executive may have a client in his office and be unable to converse with the calling party at that time. Or a housewife may be in the midst of preparing dinner for her family and her attention needed to supervise her cooking. A mother may be bathing the baby and not find it convenient to talk at that time. People are grateful, under such circumstances, when the calling party asks, "Is it convenient to talk?", and they are then in a position to ask, "May I call you a little later?"

It is important to speak directly into the transmitter and to use a natural tone of voice. Shouting or speaking too loudly sounds gruff to the person at the called telephone.

Many people talk "at" a person and not "to" a person by their failure to visualize the person at the called telephone.

"Thank you" and "You're welcome" are courteous words and can frequently be used to good advantage in using the telephone.

To listen attentively reflects good telephone manners. Interrupting when another person is speaking is discourteous.

There is no sweeter music to a person than his or her name. Use it any time it can be used effectively.

People cannot see what you are doing while they are waiting at the other end of the line and any necessary waiting should be explained to the calling party.

A brief apology is in order when a number is called in error, regardless of who may be at fault in reaching the wrong number. Don't hang up the receiver and display your annoyance in reaching a wrong number to the called party. He had nothing to do with it except to be disturbed by the "wrong number" call. A man answered his telephone and a voice said, "What number is this?" to which he replied, "*You* ought to know. *You* called it."

The telephone should be answered as promptly as possible. Failure to do so may result in the loss of an important call.

Use a pleasing tone of voice in answering your telephone. The person calling may be your best friend or customer.

It is important to identify yourself by name, number, or both when answering your telephone. Don't use the outmoded word "Hello." If your voice is not recognized by the calling party, he will start to question you, which results in a waste of time and in some instances a lively argument. It is surprising how many men and women engaged in the telephone industry fail to answer their telephones properly. Surely we should set the pace for others.

If you are going out, leave word where you are going and approximately how long you will be gone. The person responsible for answering your telephone during your absence will appreciate this courtesy and it may relieve her of a great deal of embarrassment.

When it is necessary to question a calling party, it should always be done tactfully, not by saying, "Who is this?" "May I tell him who called?" is much more effective and pleasing.

When answering the telephone for others, if the called party is out, ask if you may take a message.

It goes without saying, if it is necessary to signal the operator, do so slowly so that she may see the signal.

All telephone calls should be termi-

*(Please turn to page 37)*



XUM

### Section 20 (Continued)

(8) PBX conferences serve as a medium whereby important service features can be reviewed, not necessarily from the standpoint that the customer doesn't know them, but through discussion, training films and central office tours. opportunity is afforded to review, crystallize and emphasize the features.

(9) The meetings help convince the attendant and sell her employer on the importance of her work—that by giving good telephone service to calling consumers, they bring about less sales resistance which, in the end, promotes more sales.

(10) Having the PBX customer management attend convinces him of the benefits such meetings bring to his attendants and company.

(11) The attitude of the attendants toward Service Advisers and the telephone company in general, is very, very important. Every possible opportunity should be taken to develop close relationship between telephone company representatives and attendants so that mutual understanding will exist in the attempt to provide good PBX service. Group meetings are among the better ways to accomplish such a program.

(12) Tours of the telephone company's central office by PBX customer management and attendants, and visits to customer's premises by long distance chief operators, arranged for by the Service Adviser, are excellent means of creating and maintaining good relationship between PBX customers and the telephone company. Such visits, however, must be governed by civil defense regulations. Such central office visits create a greater appreciation of service problems and usually improve the cooperation of all concerned.

### Section 21
### How to Order

(1) *Trouble Caps.* Trouble Caps, which are split, semi-hard rubber or plastic tubes, 1 inch long, designed to fit over the sleeves of plugs, provide a definite and simple means for marking cord pairs on which trouble has occurred.

Their use decreases the possibility that the attendant will turn down a cord on which trouble has occurred and insert the plug tip into the cord



socket. The PBX Service Adviser should provide trouble caps only if the PBX attendant is interested in using them and will care for them properly.

Generally, two trouble caps per position of switchboard should be adequate.

(2) *Key Sleeves.* Key sleeves, if provided, will help in the supervision of uncompleted calls and giving progress reports. Key sleeves should be given out only if the attendant is interested in using them.

Two sleeves per position of switchboard ordinarily should be sufficient.

(3) *Cord Clips (Small tiger clips).* Cord clips may be provided to designate calls on which action is pending before the cord is disconnected. Cord clips should be given only if the attendant is interested in using them. Two clips per position should be sufficient.

(4) *Signal plugs.* Signal plugs are usually approved for use where they will be advantageous from a service standpoint. The PBX Service Adviser should keep a supply on hand for immediate distribution. They may be obtained from any telephone supply house.

(a) To plug up spare jacks—metal signal plugs with black, flat heads, to be used in spare jacks, except those so located there is little danger that the attendant would plug into them in error.

(b) To indicate changed numbers—metal signal plugs with white, flat heads, to be used in jacks of extensions for which calls are to be transferred. The number of the extension to which the calls are to be connected can be written on the white surface of the plug, using black ink.

(c) To designate special service requirements—metal signal plugs having colored plastic caps which project about one-half inch from the face of the

**If there is sufficient demand, the Handbook will be reprinted.**



switchboard after being inserted in the jack. They will be used principally at hotels to indicate special service requirements.

NOTE: Signal plugs will avoid the attendant's using paper or other means of designating switchboard jacks.

(5) *Operator's Telephone Set.* Two types of operator telephone sets are available for use at PBX switchboards—the headset and the handset. Very careful consideration should be given to providing the type of attendant telephone that is best suited to the particular PBX.

At key switchboards (cordless) the standard type desk set, a hand telephone or a hang-up telephone is provided as standard equipment.

At one-position cord switchboards, a headset is provided as standard equipment unless a hand telephone is specified. If both a hand telephone and a headset are desired the tariff rate for a relief attendant's set will apply for the extra set.

Where the board is a busy one, headsets are preferable to handsets because they permit two-handed and overlap operation. Should the full time of the attendant be required for operating during the busy hours only and a relatively large part of her time doing other work during the non-busy hours, the PBX customer should be encouraged to have a handset provided as well as a headset.

However, a handset should be recommended in addition to a headset only where it seems certain that such an arrangement will not bring about poor service.

At switchboards of two or more positions, headsets are provided as standard equipment—one set per position. If additional sets are desired they should be provided at the tariff rate of a relief operator's set.

At key or cord switchboards, any change in the type of attendant's telephone set should be made without charge.

*(Section 21 to be continued next week)*

*rk . . . storming . . . trouble above . . . clear below*

DOW

# Dow weed and brush killers take the "expense" out of emergencies

RIGHT OF WAY wide and clear—ready for any emergency. Chemical weed and brush control meant this repair team arrived safely and quickly —and reduced your outage time.

Chemicals reduce line maintenance costs, too. Neater, longer-lasting and faster than cutting.

It's common sense to select the most effective control available . . . it's economically basic to consider *first* the cheapest way. Dow Brush and Weed Killers were developed to meet these qualifications . . . and typically, with Dow you have chemicals specifically designed for easy use, safe application, and your specific vegetation problem.

**Special chemicals for brush, grass.** Use Esteron® 245, Kuron® or Esteron Brush Killer on trees and brush. Here's hard-hitting power for effective control. Use Radapon*, containing dalapon sodium salt, for grass control. Works through leaves but kills roots, too.

**Baron—simple, complete weed control.** Use Baron* for control of both broad and narrow-leaved weeds. It's ideal for use around substations, storage areas and plant sites.

Application techniques are simple. Your own crew can do the job.

We'll be glad to send cost figures showing how other people saved money using Dow selective herbicides. Write THE DOW CHEMICAL COMPANY, Industrial Section, Agricultural Chemical Sales Department, Midland, Michigan.

*Trademarks of The Dow Chemical Company

*you can depend on DOW AGRICULTURAL CHEMICALS*

DOW

# Independents Serve Two National Park Caves

INDEPENDENT telephone companies have the distinction of rendering service in caves of two national parks, located in their territories.

The parks are Wind Cave National Park of Hot Springs, S. D., and Carlsbad Caverns National Park of New Mexico.

When winding through caverns 225 feet underground, visitors to Wind Cave National Park can be worry-free when it comes to thoughts of losing contact with the outside world. Since the installation of a North custom-built PABX telephone system by Hot Springs' Peoples Telephone & Telegraph Co., calls from the very depths of this underground attraction can be made to anywhere in the universe.

Telephone calls not only can be made from "The Crossroads" centrally located in Wind Cave, but also from two other strategically situated underground stations as well as from the cave's passenger elevator. Besides providing service over 200 feet below the earth's surface, this completely automatic dial system connects 18 other telephones conveniently placed above ground throughout the park area. An added fire protection and emergency call system is thus provided for the more than one million yearly visitors.

The PABX switchboard is located in a small room carved from solid rock underneath one end of the Wind Cave administration building.

This PABX system, according to J. L. Hodges Jr., North Electric's sales representative, has no counterpart. Lightning and moisture control were just two of the many problems that had to be considered when engineering this unusual system. Hodges explains that in most every instance standard North stock components were utilized in producing the Wind Cave PABX.

Manager Les Jensen of Peoples Telephone & Telegraph Co. describes his company's project as "one of the most unique telephone systems in existence." Mr. Jensen noted that this system now makes it even possible for a local or long distance telephone call to be started at ground level, continued in the elevator going below the earth's surface, and concluded in the cave 225 feet underground.

Wind Cave Park Superintendent Earl M. Semingsen added that the Wind Cave is probably the only cave in the National Park system that has a telephone arrangement offering "outside" contact with any other telephone system. Mr. Semingsen also pointed out that the "mine" type telephones used in the cave are so connected to the switchboard that not a single line is visible to the tourist to detract from the natural beauty and wonders of Wind Cave.

* * *

Near the entrance to Carlsbad Caverns National Park, General Telephone Co. of the Southwest has placed an 8x20 foot signboard which reads, "Have You Called Home from the Caverns?" This sign will remind approximately one-half million visitors annually from all 48 states and many foreign countries that modern long distance service is offered them to call home from the cavern lunchroom located 750 feet underground, equivalent to the height of a 50 story building.

In the lunchroom, where a stop of about 40 minutes is made for lunch and rest, General Telephone Co. has installed a new aluminum outdoor type booth with paystation for the visitors to make their calls home or to friends. At the entrance to the caverns, near the concession, a paystation is located for use by visitors while waiting for tours to begin.

Another paystation is located at the White City Cafe some 1,500 feet from the entrance to Carlsbad Caverns National Park. White City, which is owned by Charlie White, is served with a PABX system. No collections results are available at this time as these paystations were not installed until late April, and the busy season at the caverns does not start until school vacation starts.

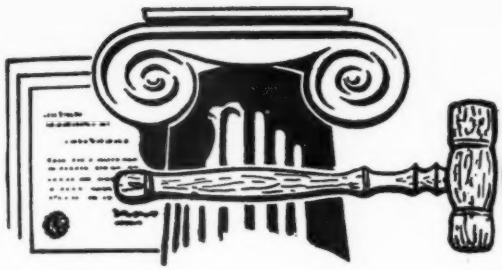
Carlsbad Caverns National Park is located in the semi-desert country of Southeastern New Mexico in the rugged foothills of the Guadalupe Mountains. The cave, for which the park is named, is of unusual magnificence and size. The park is also served with a PABX system.

The history of the caverns gives evidence that the cave entrance and adjacent area were occupied at one time by Indians, and that early pioneer trails passed near the cave entrance.

Cattlemen, the first permanent settlers, arrived in the 1880's. They knew of the cave, referred to as the Bat Cave, and may have explored portions of it. The first real interest in the cave, however, resulted from the finding of its valuable deposit of bat guano, a nitrate-rich fertilizer. At the turn of the century, mining began, and among the miners was a local youth, Jim White, who took every opportunity to explore the cave. Later, Jim became an unofficial guide, and subsequently,

*(Please turn to page 38)*

**"How's the weather down there?" asks Earl M. Semingsen, Wind Cave Park Superintendent, as he calls an assistant 225 feet underground. Standing by, from the left: Charles Leonard, Publisher of Hot Springs Star; J. L. Hodges, Jr., North Electric Company Sales Representative; Les Jensen, Manager of Peoples Telephone and Telegraph Company; H. M. Kruse, Peoples T. & T. Foreman; V. M. Flanagan, Peoples T. & T. Assistant Foreman; and C. R. Hicks, Northwestern Bell Representative. Photo courtesy, Photo Art Center of Rapid City, S. D.**



# Courts and Commissions

## Mississippi Company Asks 50% Increase in Rates

It was reported on Aug. 27 that the Mississippi Public Service Commission will announce its decision on Sept. 15 in a 50 per cent rate increase sought by the Bay Springs Telephone Co.

D. L. Fail, manager of the company, testified before the commission on Aug. 25, contending that the higher rates are needed to meet interest and principal payments on a million-dollar loan from the Rural Electrification Administration.

Mr. Fail was reported as stating the company grossed $56,000 a year and pays $40,000 to the federal agency.

## Texas T&T Reports Raises For Three Exchanges

Texas Telephone & Telegraph Co., Corsicana, on Aug. 27 reported the following rate activity:

On Aug. 21 the city of Rice approved rates for dial service and also interim rates. The Rice exchange has 83 stations. Rates are as follows:

| | Present | Interim | Dial |
|---|---|---|---|
| 1-party business | $3.75 | $4.50 | $8.00 |
| 2-party business | 3.25 | 4.00 | 7.00 |
| 4-party business | .. | .. | 6.50 |
| 1-party residence | 2.50 | 3.25 | 5.00 |
| 2-party residence | 2.25 | 3.00 | 4.60 |
| 4-party residence | .. | .. | 4.25 |

On Aug. 22, for its Caddo Mills exchange (237 stations), the company was authorized by the city to effect the following rate changes:

| | Present | Dial |
|---|---|---|
| 1-party business | $7.00 | $8.70 |
| 2-party business | 6.00 | 7.80 |
| 4-party business | 5.50 | 7.20 |
| 1-party residence | 4.25 | 5.70 |
| 2-party residence | 3.90 | 4.80 |
| 4-party residence | 3.50 | 4.00 |

The city of Celeste authorized rate increases on Aug. 23 for the Texas T&T subscribers there. The Celeste exchange has 177 subscribers. Rates are as follows:

| | Present | Dial |
|---|---|---|
| 1-party business | $4.20 | $8.40 |
| 2-party business | 4.00 | 7.80 |
| 4-party business | .. | 7.20 |
| 1-party residence | 3.00 | 5.70 |
| 2-party residence | 2.82 | 4.80 |
| 4-party residence | 2.70 | 4.00 |

Since Jan. 1, 1956, the company reports having received approval of dial service rates for 16 exchanges.

## Two Companies Authorized Rate Relief in Oregon

The Oregon Public Utilities Commissioner on Aug. 22 approved a rate increase for the Northwest Telephone Co., Redmond, and on Aug. 21 a raise for the Oregon Telephone Corp., Mt. Vernon.

In judging the Northwest company's application, the commissioner found that additional gross annual revenues of $28,143 were necessary to enable the company to carry on its improvement program as well as continue to furnish its patrons improved service. The increase will provide a rate of return not to exceed 6.5 per cent, it was stated.

Findings of the commissioner on the plea of the Oregon corporation were that a gross annual increase in revenue of $14,837 as requested, would produce the same rate of return as the company experienced on its 1955 operations (a 0.19 per cent return on average net plant and working capital of $162,292.81).

The capital investment has increased to $198,975, and the approved increase of $14,837 will be just sufficient to keep the rate of return the same.

The commissioner noted that the Oregon Telephone Corp. "contends that no additional revenues are required for the immediate future period, pending the results of further studies relating to revenue and expenses."

## Mich. Bell Names Goodman To Rate and Revenue Post

Henry W. Goodman, assistant vice president-operations for the Michigan Bell Telephone Co., has been elected vice president by the company's board of directors.

In his new post, Mr. Goodman will assume over-all responsibility for rate and revenue matters.

He succeeds W. Calvin Patterson, who continues as public relations vice president and member of the board. First appointed to head public relations in 1940, Mr. Patterson has been responsible for both public relations and revenue matters since 1950.

William M. Day, Michigan Bell president, said the changes bring Michigan Bell's organization in line with that of other Bell System companies of comparable size which have found this type of organization necessary to meet the problems created by a rapidly-growing industry.

Ferry B. Allen, assistant vice president in the company's revenues department, succeeds Mr. Goodman in the operations post.

## Approves 6.03% Return For Bell of Nevada

Nevada's Public Service Commission approved, effective Sept. 1, a higher rate schedule for Bell Telephone Co. of Nevada that will give it $251,580 in additional annual revenue and a return of about 6.03 per cent on its intrastate operations (TELEPHONY, May 26, p. 51).

The company had sought $510,000 in additional annual revenue and a rate of return of 6.3 per cent on its intrastate operations.

A commission analysis estimated that the increases allowed will give Nevada Bell annual income from intrastate operations of $4,340,956, and a net operating income of $560,036.

The commission said the company is "in sound financial condition," with an overall rate of return on both intrastate and interstate operations of 6.97 per cent.

## Iowa Cooperative Incorporates

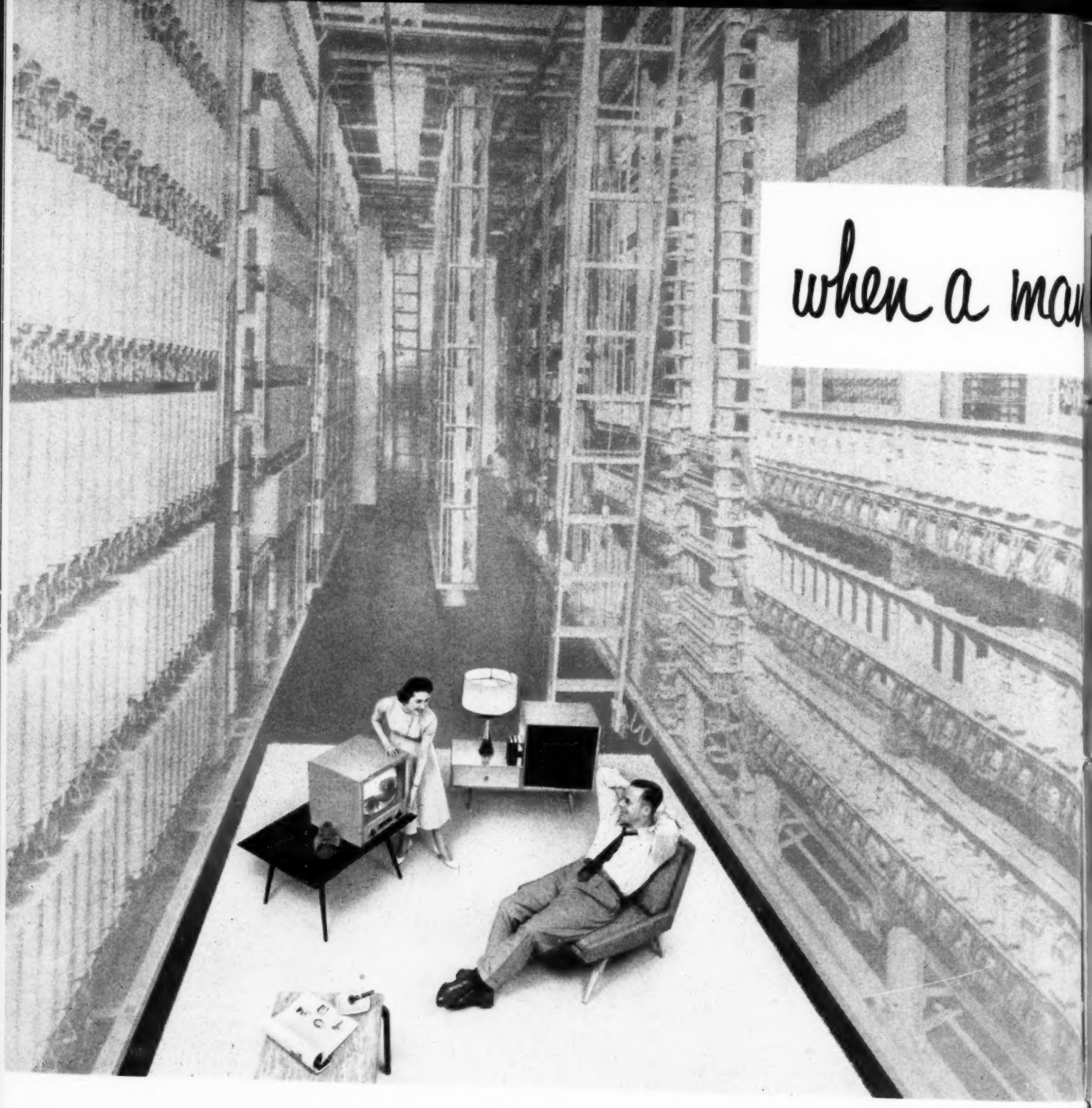
The Barnes City Cooperative Telephone Co. was approved for incorporation recently by the Iowa secretary of state.

Officers listed in the incorporation include Robert Sanders, president; Bert Butler, vice president; and Dwight E. Barthelman, secretary-treasurer.

## Transfer Effected in Kansas

The Green Telephone Co. has been taken over by the American Communication Co., Haddam, Kan., according to

*(Please turn to page 34)*




AUTOMATIC ELECTRIC

ORIGINATORS OF THE DIAL TELEPHONE

GENERAL TELEPHONE SYSTEM

XUM

# ...has to live with it, he plans it right!

There's something reassuring about the way Automatic's people work with you to plan your new Strowger exchange. They act just as though they were going to have to live with it.

Because they are!

They're not through with you at cutover. They're going to be at your call all through the long, long life of your exchange.
So they plan it *right*. Drawing on over 60 years of successful dial exchange experience—a resource that only Automatic Electric can offer—these experts smooth your path, boost you over each hurdle.
Let's see just who they are, and what their help means to you:

### Your Automatic Electric Salesman

He knows you and the problems in your area. His practical telephone-man's approach to them can do much to insure your success.

### Automatic Electric Staff Engineers

These experts help in the initial planning of your exchange—the traffic survey, growth survey, method of handling toll traffic, building-site selection, building planning, and equipment selection. They suggest the most efficient and economical solutions for each problem, and provide amply for present requirements and for future expansion.

### Automatic Electric Design Engineers

Each an expert in his own specialty, they select for your exchange the proven arrangements and circuits that will work best for you. They design new arrangements to meet new needs. Then the equipment is made under Automatic's rigid quality control standards, with every precaution taken to insure its being a 100% success.

### Automatic Electric Operating Engineers

Skilled consultants, they provide you with a free advisory service covering cable records, billing, routining, cable plant design, and service problems. They help you set up operating procedures which assure that your exchange will afford you a maximum return on your investment.
Call us when you plan to convert to dial. We'll be there...pronto! Address: *Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7. Or call HAymarket 1-4300.*

an Aug. 9 report. The transfer was approved by the Kansas Corporation Commission.

## Dial Rates Authorized for South Dakota Co-op

South Dakota Public Utilities Commission on Aug. 10 was reported to have prescribed a schedule of rates for the Langford, Hitchcock and Tulare exchanges of the Sully Buttes Telephone Cooperative.

Rates include $9.00 for one-party business service and $5.75 for one-party residence. These are dial service rates, to take effect upon conversion.

## Wyoming Commission OKs Independent's Sale

The Wyoming Public Service Commission has authorized the sale of the Zierlein Telephone Co., Cokeville, to the newly organized Cokeville Telephone Co., it was reported recently.

The order was issued to applicant Bernice Abernathy of Cokeville and authorizes the transfer of 150 shares of common stock in the new company. The shares have a par value of $100.

## N. C. Company Applies for $6,300 Increase in Rates

Pender Telephone Co., Burgaw, asked the North Carolina Utilities Commission on Aug. 23 for permission to increase its rates by $6,300 annually, stating that additional revenue is needed because of increased operating costs.

The company in its petition said the increase "would only partially take care of the increased operating expense."

It said that for the 12-month period ending last Mar. 31 its net operating income was $4,956.22.

## Mountain States Authorized To Up El Paso, Tex. Rates

Mountain States Telephone & Telegraph Co. on Aug. 15 was granted an annual gross rate increase of $452,000 on its El Paso, Tex. operations.

The increase is about 54 per cent of the $840,000 asked by the company.

## Enters Rate Plea in Ill.

A proposal for increased rates by the Wataga Mutual Telephone Co. was to have been heard on Sept. 6 by the Illinois Commerce Commission.

## Approve Sale of Mo. Mutual

The Missouri Public Service commission on Aug. 24 authorized the Marion Rural Telephone Co. to expand its service area into that presently served by the Benbow Mutual Telephone Co. (TELEPHONY, Aug. 4, p. 36). The Benbow company served 52 subscribers.

**LEFT PHOTO: J. Grant Keys, mayor of Elyria, O., makes the first call from an outdoor paystation to inaugurate this Elyria Telephone Co. service. Left to right, looking on, are: Ruth I. Keith, general commercial manager of the company; Victor Stewart, an Elyria councilman; Weldon W. Case, vice president and general manager of the company, and John Mudrak, general plant superintendent. RIGHT PHOTO: Mr. Case points out to Miss Keith progress on the company's new headquarters building. A giant thermometer indicates stages of completion for Elyria residents. The project, involving an expenditure of 2 million dollars, also contemplates provision for direct distance dialing.**

## BOOK REVIEW

**"RELIABILITY FACTORS FOR GROUND ELECTRONIC EQUIPMENT." Prepared through the support and sponsorship of the General Engineering Laboratory, Rome (N. Y.) Air Development Center. Keith Henney, editor-in-chief. 280 pages, 196 illustrations, price $7.50.**

How to improve the reliability of electronic equipment according to methods provided for the Armed Forces is shown in this book. It gives electronic engineers tested methods and basic working data stemming directly from efforts of government and industry to combat the high percentages of equipment failure. For the first time, this wealth of essential information is made publicly available in practical form, and it presents under one cover, the statistics of unreliability, reasons for the present poor reliability, and many techniques for improving reliability in the future.

The book develops many workable criteria to help the equipment designer. Examples of poor circuit and mechanical design are presented in a helpful manner. It describes the "system approach," guiding the engineer in designing electronic equipment with the reliability of the entire system as a prime objective.

Electrical and mechanical factors, such as proper tube application, and effects of shock and vibration, are discussed in a practical way.

The book applies human engineering principles to electronic design, explaining such factors as vision, hearing, and motor performance. It helps the engineer select and use component parts and tubes, and gives the results of recent failed component parts studies. Interference reduction, automatic production methods, equipment service manuals, and maintenance, are all discussed with a view towards their effect on reliability and their interest to the equipment designer.

Some of the important design helps are:

—rules for good military circuit design
—comparative circuit reliability
—exponential law of reliability
—proper and improper ways to use tubes
—moisture-prevention techniques
—Tinkertoy and Auto-Sembly production systems
—relative merits of hermetic sealing techniques
—transportation and storage problems
—vibrator selection and usage
—the Gaussian Law; "wear-out" failures
—benefits of unitization
—heterogeneous vs. homogeneous systems
—techniques for preventing interference

—characteristics of various embedment compounds
—relation between complexity and reliability
—systems vs. component buying
—redundancy as a reliability asset
—standardization vs. special design
—heat removal techniques
—designer's responsibility for equipment publications
—value of fault-locating techniques

Many experts contributed their knowledge and experience to this book, including: Irving Lopatin, associate editor; Elmer T. Zimmer, associate editor; Leonard K. Adler, operations manager, McGraw-Hill Book Co., Technical Writing Service, and Joseph J. Naresky, project engineer, Rome Air Development Center.

Also: Raymond C. Miles, Airborne Instruments Laboratory; A. L. Wilson and Norman B. Ritchey, Sylvania Electric Products, Inc.; Albert Tollefsen, P. R. Mallory & Co.; Leon Podolsky, Sprague Electric Co.; Byron B. Minnium, Erie Resistor Co.; Ray H. Cripps, American Electronic Mfg. Co.; and R. M. Purinton, consulting engineer.

This book may be purchased through TELEPHONY.

# IN THE NATION'S CAPITAL

*Concluded from page 18*

Justice Brandeis stated that either an occupation tax or an ad valorem tax 'might conceivably be so large as to render the local business immediately unprofitable. A common carrier cannot be compelled to carry on business indefinitely at a loss.' "

Professor Haskins proposed a remedy in the form of a federal law which could be incorporated as part of the general federal statutes regulating railroads, airplanes, interstate telephone companies, etc. It would read as follows:

"No state shall, through taxation, expropriate such a share of the net income of a carrier earned within the state that, if a like share were expropriated by each of the other states in which the carrier operates, the result would be either to impair the carrier's credit or to weaken or incapacitate it as an instrumentality of interstate commerce."

### *ABA Boss Appeals to Reason*

One of the hardest facts to convey to the intelligence of many Americans is that there is no such thing as money furnished by the state. If you get behind the thinking of every advocate of pension, subsidy, and other forms of legislative government largess you will generally find a deeply entrenched fallacy. It consists in the presumption that the state is an impersonal treasury to be tapped for the benefit of the wandering poor and afflicted, not to mention everybody who hasn't a million dollars and some who have.

The fact is that all public money disposition must be paid for by a highly personal citizen. It is you and your neighbor. You may think that your mother is a fine person and ought to have an old age pension because you cannot get married or support your golf game while you have to support her. What you are actually saying is: "I don't want to support the old lady. Let's make John Smith in the next block support her. He has more money than I have." The same thing goes for every dime taken from the public treasury and distributed to anybody who isn't earning it: Veterans, farmers, old folks, retired congressmen, and even widows of ex-Presidents.

The cost of these miscellaneous benefits is a price which has to be paid. It can be a very high price—even the ultimate loss of liberty. Like those famous Faustian contracts with the devil, it is a long time coming due; but sooner or later it has to be paid.

It was against that due date, and the increasing disposition of the American public to make certain it's coming, that the president of the ABA warned in his address to the convention in Dallas, Tex., on Aug. 28. E. Smythe Gambrell, Atlanta lawyer, who retired as head of the ABA, put it succinctly when he identified the basic principles of American life, the belief in which this country was founded and has prospered. He said: "No national government should do what the states can do . . . No state should do what the local government can do. No government should do what a man can do for himself."

If we could all subscribe to that, enforce it by abolishing every area of unnecessary aid from any unit of government, the United States as we have now would be forever safe. But if we continue to build up the structure of the welfare state, this nation could well go the route to destruction traveled by so many nations in the past. An unknown sage summed it all up, in the vernacular, some years ago with that well-known, simple statement: "There ain't no such thing as free lunch."

## H. T. McCaig in Hospital

Friends of H. T. McCaig, pioneer Independent manufacturer's representative, who has been confined to the MacNeal Memorial Hospital, Berwyn, Ill., will be happy to know that he is recovering rapidly and soon will return to his home at 6937 31st St., Berwyn.

## Power Named Chairman of ABA Public Utility Section

Donald C. Power, president of General Telephone Corp., and long active in the affairs of the American Bar Association and the Section of Public Utility Law of the association was formally elected as chairman of the public utility law section at the section's meeting held Aug. 28, in Dallas, Tex.

D. C. POWER

Mr. Power took office for a one-year term at the close of the section's annual meeting on Aug. 29, succeeding Ralph M. Besse of Cleveland, O.

The public utility law section of the association is composed of 1,650 attorneys practicing in the electric, gas, railroad and communications fields throughout the United States.

Under Mr. Power's leadership the section is planning an interesting program for its annual meeting to be held July, 1957 in New York City and in London, England.

## Helps Foil Iowa Burglary

Mrs. Lillian Busby, Huxley, Iowa telephone operator, on Aug. 23 was credited with foiling an attempted burglary by two men, one of whom knocked a telephone receiver off its hook. Mrs. Busby, the wife of Charles Busby, manager of the Huxley Cooperative Telephone Co., said she heard what sounded like pounding over the displaced telephone. Her prompt notification of authorities led to the arrest of the two men.

## Approves Missouri Purchase

The Missouri Public Service Commission has authorized the purchase of the Diamond Telephone Co. from Mr. and Mrs. Oscar Ackerman by the Granby Telephone Co., it was reported on Aug. 23.

# MINNESOTA COMPANIES ADOPT PENSION PLAN

*Continued from page 22*

should later be terminated for any reason, it is required by law that all of the cash values be completely vested in the individual employes with no possible cash return to the employer.

### Underwriting Requirements

The individual underwriting requirement will be extremely lenient.

There will be no individual underwriting requirements involving retirement income. Each employe, regardless of health, will receive his retirement income in accordance with the foregoing specifications.

*Underwriting of Family Income in event of Death and of Total and Permanent Disability Income.* These benefits involve a certain amount of insurance risk, and will be underwritten on the following bases:

*General Practice:* In a few cases it may be necessary to reduce the death benefits and the total and permanent disability benefits to some extent, but every employe—regardless of health—will nevertheless be assured a minimum family income and a minimum total and permanent disability income.

*Non-Medical Underwriting:* The death benefits and the total and permanent disability benefits will be underwritten non-medically at all ages up to $7,500, thus avoiding the bother of a medical examination in most cases. However, the insuring company reserves the right to require a medical examination in every case.

*Complete Benefits:* Every normally insurable employe will receive death and total and permanent disability benefits equal to $1,000 for each $10 of monthly retirement income, payable plus interest at $10 per month for nine years and two months, a total of $1,100. (The employe's beneficiary may elect to take the death benefit payment in a lump sum of $1,000 for each $10 of prospective monthly pension.)

*Partial Benefits:* Every partially insurable employe, for whom an extra premium would usually be charged, will receive death and total and permanent disability benefits equal to a reduced percentage between 100 per cent and 25 per cent of $1,000 for each $10 of monthly retirement income, but no extra premium will be charged.

### Cost

The original gross cost to each telephone company for the plan outlined herein will, of course, vary greatly in accordance with the age, salary and length of service of each employe.

*Estimate of Cost.* It is estimated that the original gross cost will average about 15 per cent of salary for the participating employes, or about 10 per cent of the total payroll. It is further estimated that as the older employes are retired and are replaced by younger employes, the cost will be reduced to and will level out at about 10 per cent of salary for the participating employes, or about 7 per cent of the total payroll.

*Reduction of Original Cost.* For companies with a higher than usual average age, there are two ways in which the original gross cost may be reduced and leveled out over the first 10 years:

The premiums for all employes who will retire within the first 10 years may be amortized over a full 10-year period, thus avoiding the unnecessary burden of an extremely high cost at the start.

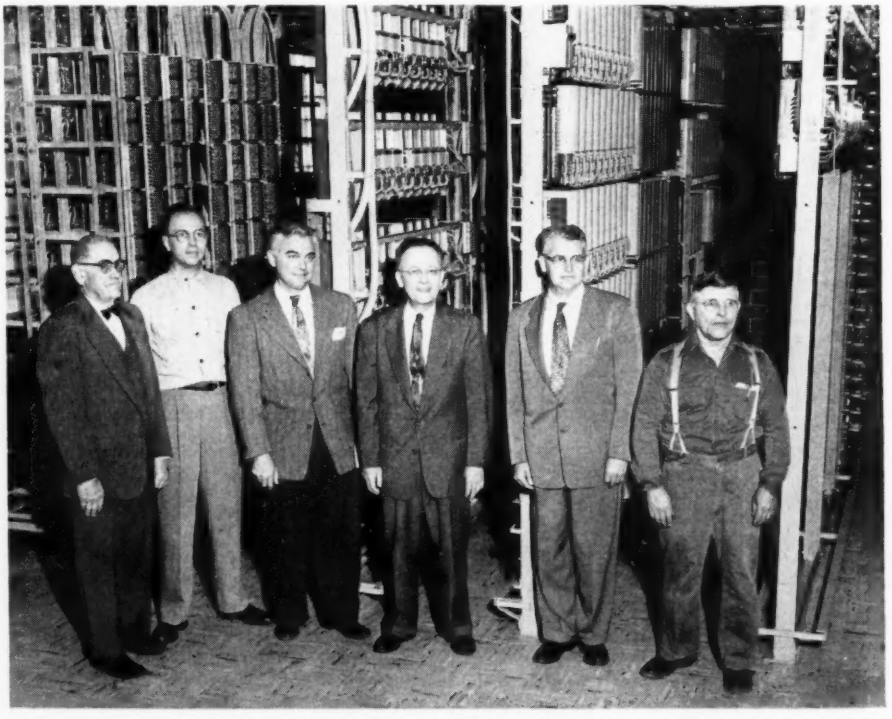
The premiums for all employes age 50 and younger may be reduced approximately 30 per cent for the first 10 years and then doubled, with the result that the combined premium cost to the company for the older and the younger employes will remain quite constant from the start.

*Dividends.* This pension plan is a participating plan, with dividends payable at the end of each year, including the first. Dividends may not be paid in cash to the employer, but will be applied as a credit against the premium for the following year.

*Income Tax Deduction.* The entire premium cost for an employe pension plan paid by the employer is deductible for income tax purposes as an operating expense on the same basis as salaries.

Pension costs are allowable costs in rate determination cases. The (Minnesota) Railroad & Warehouse Commission has indicated that cost incurred by an employer for a pension plan shall be an allowable cost in rate determination hearings. This cost allowance reflects no new policy but this information has not in the past been clearly understood by all employers in the industry. This position of the railroad and warehouse commission has been given to us verbally as well as in writing.

*Employee Contributions.* Each individual company would be allowed to elect whether or not to have their employes contribute toward the cost of the plan. If a company elects to have the employes contribute, it is recom-



**This picture was taken recently when the Topton exchange of the Conestoga Telephone & Telegraph Co., Birdsboro, Pa., was cut over to automatic, making Conestoga, with its seven exchanges, 100 per cent dial. Equipment in Topton's new $200,000 building is of the terminal-per-station type. Pictured are (left to right): John K. Stoltzfus, president of Conestoga; Richard E. Snyder, central office installer and repairman; Floyd R. Kulp, equipment engineer; Charles S. Rhoads, Conestoga vice president-general manager; Alvin C. Glick, plant manager; W. John Reeser, Topton installer and repairman.**

mended that the contribution be at the rate of 2 per cent of salary.

### Annual Premiums

*Standard Premiums.* These premiums are payable on a level basis from age at entry until retirement at age 65. They provide one unit of $10 monthly retirement income in the event of death, total and permanent disability and retirement. They will be used by companies where the average age is normal and no special adjustment is needed to take care of the higher cost of one or more older employes.

| Age at Entry | Male | Female |
|---|---|---|
| 30 | $ 39.79 | $ 43.63 |
| 40 | 61.15 | 67.28 |
| 50 | 111.34 | 123.05 |
| 60 (retire at 70) | 161.73 | 177.41 |

*Premiums Reduced 30 Per Cent During First 10 Years.* These premiums, to be used for employes entering the plan between the ages of 30 and 50, inclusive, are reduced approximately 30 per cent from the standard premiums for the first 10 years and are then doubled until normal retirement age. They provide one unit of $10 monthly retirement income in the event of death, total and permanent disability and retirement. They may be used by companies where a large proportion of costs are incurred by older employes who will retire within 10 years.

| | Male | | | Female | |
|---|---|---|---|---|---|
| Age at Entry | First Ten Years | After Ten Years | Age at Entry | First Ten Years | After Ten Years |
| 30 | $25.49 | $ 49.54 | 30 | $27.83 | $ 54.23 |
| 40 | 41.71 | 81.44 | 40 | 45.70 | 89.42 |
| 50 | 88.72 | 174.24 | 50 | 97.63 | 192.07 |

*Retirement Income Premiums Payable for 10 Years.* These premiums, to be used for employes entering the plan at ages 61 and over, are paid over a period of 10 years or until the prior death of the employe. These premiums may be used by companies where it is desirable to level out the total cost for the first 10 years of the plan.

Between ages at entry of 61 and 69, inclusive, and continuing until retirement at age 70, these premiums provide one unit of $10 retirement income in the event of death, total and permanent disability and retirement.

From age 70 and older these premiums do not provide a monthly income in the event of death or total and permanent disability, but they do provide retirement income guaranteed for 10 years certain and life thereafter.

| Age at Entry | Age to Retire | Male | Female |
|---|---|---|---|
| 60 | 70 | $161.73 | $177.41 |
| 65 | 70 | 191.77 | 208.08 |
| 70 | 70 | 217.49 | 229.92 |
| 75 | 75 | 212.80 | 217.49 |

### Social Security

The retirement income amounts provided by the pension plan will be supplemented by social security pensions.

*Social Security Pensions.* Social security pensions are based solely on the first $350 of monthly salary. The amount of pension for an employe is equal to 55 per cent of the first $110 plus 20 per cent of additional monthly salary up to a total salary of $350. For example, if salary is $350 monthly, the pension is $60.50 on the first $110 plus $48 on the next $240, or $108.50.

The wife of a retired employe, upon attainment of age 65, will receive an additional social security pension equal to 50 per cent of that paid to her husband. If the husband dies first, either before or after attainment of age 65, the widow's social security pension at 65 and after will be equal to 75 per cent of the pension which would have been paid to her husband if he had lived.

## WHITTIER CUTS IN NEW SET-UP

*Concluded from page 25*

(1) A person reporting a fire can give the exact location and description of a blaze, which enables the fire department to dispatch the correct type and quantity of equipment directly to the scene in the shortest possible time.

(2) Although it still is possible to report a malicious false alarm, experience indicates that telephones keep this trouble to a minimum.

(3) A telephone conversation with the dispatcher assures the person reporting a fire that the alarm actually has been recorded and that help is on the way. He can then return to the scene of the blaze to give assistance. In the case of the "pull-box" system, the person is not always sure that the fire has been reported when he pulls the lever, and in any event it is necessary for him to wait at the box to direct the fire apparatus to the exact location of the blaze.

(4) The emergency telephone system provides a rapid and certain method of reporting fires, and may be used to report to responsible authorities such emergencies as accidents, broken water mains, fallen power lines, and requests for ambulances, inhalators, etc.

(5) The system will have built-in testing features that will notify the dispatcher immediately should any trouble occur which would make the telephones, their circuits or the power supply inoperative. Disability of one telephone or circuit will not impair any other part of the system. The board is equipped with two lamps for each line, thus giving double insurance to the receipt of emergency signals.

(6) New telephone units can be added to the system with a minimum of delay, and telephones can be added temporarily for seasonal or short time activities such as summer swimming and recreational programs, fairs, circuses, etc.

(7) Because the Whittier system is installed and maintained by General Telephone, the city is able to avoid making substantial capital expenditures which would be necessary if the system were city owned. This "known cost" service was engineered, installed and will be maintained by a telephone company which specializes in providing communications services. Maintenance service will be on a priority basis, 24 hours a day.

(8) Fire Chief Alford estimates that the telephone alarm system will be installed at about one-third the cost of a telegraphic system, and that the monthly service charge will be considerably less than it would cost the city to maintain a city-owned telegraphic system.

(9) Whittier now is rated fifth class for fire insurance purposes. Following an inspection by the Board of Fire Underwriters scheduled after the new system becomes fully operative, it is believed that the city will qualify for fourth or possibly third class rating. This upgrading is expected to reduce fire insurance rates an estimated 10 per cent, with consequent substantial savings to property owners.

## THE OPERATOR'S CORNER

*Continued from page 26*

nated properly. Don't just hang up. Say "goodbye" or a similar appropriate word or sentence.

The receiver should always be replaced gently. Slamming it on the hook is as discourteous as slamming a door in the face of a caller.

In dealing with customers, we must assume the customer is right, and in most instances, he is. A policeman who had worked in the telephone industry for a number of years was asked how his present work compared with the job he had in the telephone business. "Well," said the cop, "the pay is good, the hours are satisfactory, but the customers are always *wrong*. It will take time to get that across to myself."

I hope you will enjoy the test and that everyone will make a satisfactory, a good or excellent score. Perhaps "excellent" should have been placed first, in accordance with traffic standards.

### Traffic Questions

(1) Who is responsible for initiating periodic tests on Air Defense Warning Lines?

(2) Why is it important to make tests on Air Defense Warning Lines?

(3) What does a test on an Air Defense Warning Line consist of?

(4) What procedure is followed in making tests on Air Defense Warning Lines?

(5) If trouble is encountered in mak-

ing a test on an Air Defense Warning Line, to whom should it be reported?

*Answers are presented on page 44.*

## Conference on Electronics Set for Chicago, Oct. 1-3

Twenty-four technical sessions and three luncheon addresses of general interest will highlight the 1956 National Electronics Conference (NEC) in Chicago on Oct. 1-3.

The tentative program for the 12th annual conference features approximately 100 papers on electronic research, development, and application, according to L. T. De Vore, program chairman.

More than 10,000 persons are expected to attend the three-day technical meeting and exhibition — having "Fifty Years of Progress Through Electronics" as its theme—at the Hotel Sherman.

Principal addresses will be given by Dr. John P. Hagen, director of the "Vanguard" project at the Naval Research Laboratory, Washington; Dr. Frederick L. Hovde, president of Purdue University, Lafayette, Ind., and Dr. Herbert Scoville Jr., assistant director of the U. S. Central Intelligence Agency, Washington.

Dr. Hagen will discuss earth satellites and space travel at the Monday luncheon, while Dr. Scoville will compare United States and Russian technical education policies at the Wednesday luncheon. Dr. Hovde's Tuesday luncheon subject will be announced later.

Another feature of the conference will be three half-day educational sessions, dealing with information theory, radio isotopes, and solid state.

"The tutorial phase of the program is designed to provide a rounded picture of the newest developments in three important areas of the electronics field," Mr. De Vore pointed out.

Chairmen of the educational sessions will be: Prof. R. M. Fano, Massachusetts Institute of Technology, Cambridge, Mass., information theory; Dr. Leonard Reiffel, Armour Research Foundation of Illinois Institute of Technology, Chicago, radio isotopes, and J. P. Jordan, General Electric Co., Syracuse, N. Y., solid state.

The opening day's technical sessions will concern components and materials, instrumentation, measurements, receiver techniques, data storage systems, servomechanism theory and applications.

On Oct. 2, the technical program will deal with information theory applications, magnetic amplifiers, solid state devices and applications, network and filter theory, data processing systems, microwaves, and radio isotopes.

The conference will conclude on Oct. 3 with sessions relating to solid state, high power audio systems, network synthesis, antennas, quality control and reliability, automation techniques, medical electronics, and pulse techniques.

The Midwestern Simulation Council will hold a concurrent session on "Simulation of Hydraulic Systems" on the afternoon of Oct. 3 for those specializing in this field.

A record 240 commercial exhibits also will be displayed at the conference. This is 54 more than the previous high set last year.

Most of the nation's leading electronics manufacturers and research laboratories will have exhibits at the conference, explained Gordon J. Argall, exhibits chairman.

Advance registrations may be made until Sept. 15 through the Executive Secretary, National Electronics Conference, 84 E. Randolph St., Chicago 1, Ill. Hotel reservations should be made directly with the hotel.

The NEC is sponsored annually by the American Institute of Electrical Engineers, Institute of Radio Engineers, Illinois Institute of Technology, University of Illinois, and Northwestern University.

Also participating in the conference are Michigan State, Purdue, Michigan, and Wisconsin Universities, as well as the Radio-Electronics-Television Manufacturers Association and Society of Motion Picture & Television Engineers.

## INDEPENDENTS SERVE CAVES

*Concluded from page 30*

under the National Park Service, he was made a park ranger. Finally, he was appointed chief ranger.

The fame of the Carlsbad Caverns grew. In 1923, a report by Robert Holley, of the General Land Office, United States Department of Interior, so stressed the scenic beauty of the cave that Carlsbad Cave National Monument was established by Presidential proclamation on Oct. 25, 1923. National publicity was provided when the National Geographical Society published findings of comprehensive explorations made in 1923 and 1924 by Dr. Willis T. Lee, of the Geological Survey, United States Department of the Interior. Later, by act of Congress, approved May 14, 1930, the area became Carlsbad Caverns National Park.

When first established, the park surface area was only 400 acres. It has since been enlarged and now contains 45,846.59 acres of federal lands. Within its bounds are many other caves of either scenic or archeological interest, which have not yet been developed.

Underground trips are conducted every day in the year and require about four hours to complete, including a 40-minute lunch stop.

## REA APPROVES SIX LOANS

*Concluded from page 19*

owned magneto system serving 88 subscribers and 16 switchers from its exchange at Toivola.

The borrower also plans to obtain access rights to service line stations of the Lavell Township Switcher Lines, the Elmer Township Switchers and the Ness Township Switcher Lines. All of the 68 switchers will become regular subscribers in the proposed system.

The borrower plans all-dial service from exchanges to be constructed at Alborn, Brockston and Toivola. The existing building at Meadowlands will be modified to accommodate the new and larger switchboard to be installed. Sixty-seven miles of the existing line will be retained in use, 178 miles will be rebuilt, and 155 miles of new line will be constructed.

Sylvester T. Strain is president and manager of the company.

## Announce Missouri Company Personnel Changes

J. L. Van Horn, president of the Missouri Telephone Co., Columbia, announced on Aug. 20 that W. C. Murphy, formerly of Columbus, Neb., has been named as general manager of the company, replacing the late C. W. Gottry.

Mr. Murphy was also named general manager of the Middle States Utilities Co. of Missouri, Cameron, and the Andrew County Mutual Telephone Co., Cameron. In Nebraska, Mr. Murphy was general manager of the Nebraska Continental Telephone Co. Before that he was general manager of the Middle States and Andrew County groups.

Mr. Van Horn also announced on Aug. 20 that D. A. Smith of Nevada, Iowa, will become division plant superintendent for the three companies, replacing George King, who was recently transferred to Grinnell, Iowa. J. O. Milligan has been named division engineer, replacing C. L. Cox, also transferred to Grinnell. J. N. Cox has been named as district manager at Columbia.

L. W. Barnthouse will remain as district manager at Macon, while N. T. Cunningham remains district supervisor at Columbia.

Mr. Smith, newly appointed plant superintendent, has been associated for several years with the Iowa Continental Telephone Co. in Nevada, Iowa.

*(Please turn to page 42)*



XUM

# Out where dependability counts

YOU NEED THE NEW
INTERNATIONAL LIGHT-DUTY
4-WHEEL-DRIVE TRUCK

**Whether the way leads** by road or across country . . . *you can depend on* an INTERNATIONAL light-duty four-wheel-drive truck to deliver crew and equipment to the job site.

This new INTERNATIONAL model S-120 (4x4) can help the job schedule move faster, more surely. It goes anywhere, through sand, snow, mud . . . pulls through the bad spots . . . doesn't have to be driven the long way around.

Exclusive INTERNATIONAL full-torque power take-off transfer case available, plus power take-off transmission for auxiliary equipment. It's available in 6 tire sizes for ample clearance, extra flotation and traction.

And like every INTERNATIONAL, it is all-truck built to save you the BIG money over the years . . . the operation and maintenance money. See your INTERNATIONAL Truck Dealer or Branch today, learn more about truck dependability!

**INTERNATIONAL HARVESTER COMPANY • CHICAGO**

**NEW Full-Size, light-duty model S-120 (4x4)** gives you a gross vehicle weight of 7,000 lbs. Mounts pickup, Travelall,® service utility, stake or flat-bed bodies. Enjoy more convenience and comfort in exclusive Comfo-Vision cab. Short stroke, 131 horsepower engine standard equipment.

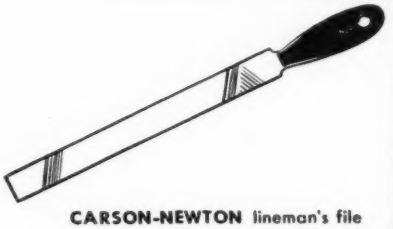
**Complete line** of INTERNATIONAL All-Wheel-Drive trucks available:
S-140 (4x4), 11,000 lbs. GVW.
S-160 (4x4) Series, 15,000-18,000 lbs. GVW.
SF-170 (6x6) Series, up to 26,000 lbs. GVW.

**INTERNATIONAL® TRUCKS**

***All-Truck Built to save you the BIG money!***

Motor Trucks • Crawler Tractors • Construction Equipment • McCormick® Farm Equipment and Farmall® Tractors

# are you a "SMARCO



**CARSON-NEWTON** lineman's file

**KLEIN** climber gaff guard

**STANLEY** screwdriver

**KLEIN** lineman's knife

**KLEIN** round-nose side-cutting pliers

**KLEIN** single plier pocket

**AUTOMATIC ELECTRIC**

ORIGINATORS OF THE DIAL TELEPHONE

GENERAL SYSTEM INDEPENDENT

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# RCOOKIE" when it comes to TOOLS?

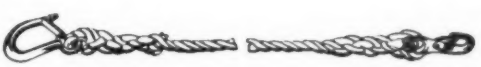
Then you'll like Automatic Electric's Supply Service! At Automatic, you get famous, proved-dependable brands you can count on for high quality and long-run economy. What's more, you get speedy service from the nearest of our five conveniently-located warehouses.

You can order any of the fine tools shown below (and hundreds more!) by calling your Automatic Electric representative or your nearest Automatic Electric Sales Corporation warehouse. Why not do it...*today?*

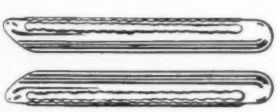
*Look at all these famous brands!*

**KLEIN** lineman's wrench

**HOWE** wire tool

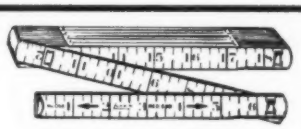


**BUHRKE** safety sling

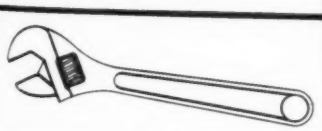


**KLEIN** plastic plier grips

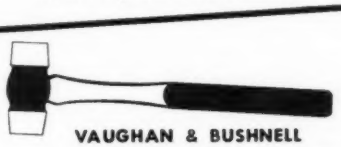
**KLEIN** adjustable tree climber



**LUFKIN** spring-joint rule

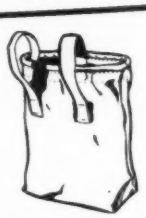


**CRESCENT** adjustable wrench



**VAUGHAN & BUSHNELL**
lineman's double face hammer

**BUHRKE** safety tool belt



**BUHRKE** lineman's pouch

**ESTWING** carpenter's hatchet

**ATKINS** handsaw

AUTOMATIC'S **5** FRIENDLY WAREHOUSES:

| | | | | |
|---|---|---|---|---|
| George Ferguson, Mgr.<br>1033 W. Van Buren St.<br>Chicago 7, Illinois<br>HAymarket 1-4300 | "Michie" Hester, Mgr.<br>2915 Moore St.<br>Richmond 21, Va.<br>Tel. 6-9280 | Ed. J. Chok, Mgr.<br>2360 N. W. Quimby St.<br>Portland 10, Oregon<br>CApital 3-7244 | Fran Batcher, Mgr.<br>158 Corliss Avenue<br>Johnson City, N. Y.<br>Binghamton 7-8507 | Gene Martin, Mgr.<br>2021 Main St.<br>Kansas City 8, Mo.<br>HArrison 1-4720 |

Mr. Milligan, plant engineer, is presently plant superintendent for the Middle States and Andrew County groups, with which he has been associated for the past 27 years.

J. N. Cox, new Columbia district manager, has been associated with the Missouri Telephone Co.'s commercial department for the past year and a half.

## Utility Management Men Take Executive Course

From July 29 to Aug. 10, 31 executives from electric, gas, telephone and water companies gathered in a completely informal atmosphere to think out executive and managerial problems at the Fifth Annual Utility Management Workshop conducted by Columbia University's Department of Industrial and Management Engineering. The Workshop is held at the Arden House Campus, Harriman, N. Y., former estate of railroad builder Edward Harriman.

Prof. Robert T. Livingston, director of the workshop and staff member of the department, has designed a unique two-week program that gets top-flight executives to chat in small informal groups and to verbalize and think out their own problems. Objective of the workshop is to create situations where the executive will realize the over-all magnitude of his job and stimulate approaches to solving problems as they arise in practice.

It is not the actual solution but the manner of approach to problems that is important. Emphasis is not on "right" or "wrong" decision but in making the best decision based on facts at hand and in relation to conditions at the time the decision is made.

In operation, the entire class sits down to a 90-minute "plenary session" right after breakfast and an "expert" of the day is introduced. He addresses the group and presents approaches to problems as viewed from his particular field.

The large group then breaks up into three working units in separate conference rooms and the "expert" visits each group for at least three-quarters of an hour during which he makes himself available for questioning and arguments.

After lunch, the three groups study their morning discussions and each formulates a major project or problem for the day and then goes about solving the problem, making use of an on-premise library, staff members, and the expert.

A few items from the recent workshop agenda are:

**View of a group study session during Columbia's Utility Management Workshop.**

"Who Is A Manager?"—Prof. Erwin H. Schell, department of Business and engineering administration, Massachusetts Institute of Technology.

"What Managers Do"—Perrin Stryker, board of editors of *Fortune*.

"The Man In the Job"—Dr. Daniel Davies, professor of education, Teachers College, Columbia University.

"Are Managers People?"—Dr. Melvin Thorner, department of neurology hospital of the University of Pennsylvania.

"The Company as an Association"—Allen Van Wyck, president, Illinois Power Co.

As indicated by this list, few of the "experts" have any connection with utilities. Professor Livingston believes that it is better to offer speakers who provoke discussion and help develop the thinking process rather than offer specific instructions that can be followed only in seldom-recurring situations.

The jobs of staff members who assist Professor Livingston is to stimulate discussions. They also are not utility experts. Most are experts in adult education.

Discussion groups are limited to 12 members, with no two from the same company. An attempt also is made to have no two who have similar jobs in the same group.

"Experts" are chosen who will give opposite viewpoints, such as those who think that American management is so good that no changes should be made and those who literally "want to stick pins in the tail of management."

"We're not trying to train crown princes," Professor Livingston explains. "We're training average guys to make fewer mistakes—even 5 per cent less would be worth while."

The need for this training, he believes, stems from the fact that technological training has far outstripped development of top-notch management personnel.

Another need arises where top management teams now are established and nearing the retirement age. The workshop tries to convince second-level executives, especially those a few years older than their presidents, that they have a real responsibility in doing their jobs well.

## Set Dates in December for Wire and Cable Symposium

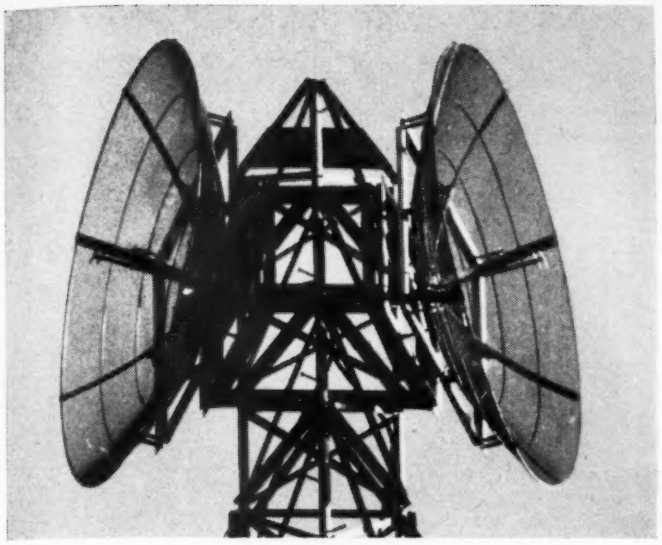
The fifth annual symposium on "Technical Progress in Communication Wires and Cables," jointly sponsored by the Signal Corps Engineering Laboratories and the wire and cable industry, has been scheduled for Dec. 4, 5 and 6 at the Berkeley-Carteret Hotel in Asbury Park, N. J.

The program will cover developments in the fields of wire and cable constructions, their characteristics and uses; conducting, insulating and jacketing materials; manufacturing equipment, processes and techniques; field construction practices, and end uses in operating systems.

Howard L. Kitts, telecommunication division at the Fort Monmouth, N. J., Laboratories, will be symposium chairman, with Howard F. X. Kingsley as co-chairman.

Other committee members are C. T. Wyman, Bell Telephone Laboratories; George Hamburger, Copperweld Steel Co.; Bjorn Jore, Anaconda Wire & Cable Co.; Vincent McBride, Plastic Wire & Cable Corp.; E. J. Burrough, E. I. duPont de Nemours & Co., and Ray Blain, Army Signal Communication Engineering Agency.

Mr. Kitts has invited those interested in attending the symposium and desirous of additional details to contact him or Mr. Kingsley at the laboratories, Eatontown 3-1000, extensions 51565 or 51564, or to write the Symposium Committee, Communications Department, Signal Corps Engineering Laboratories, Fort Monmouth.



# BLAW-KNOX MICROWAVE PACKAGE

## brings better telephone service to 100 communities

Three Blaw-Knox Microwave Transmission Towers are an important part of a recently completed three city–two state microwave-telephone toll system which was engineered, furnished and installed by Lenkurt Electric Company and Automatic Electric Sales Corporation.

This modern system links the Home Telephone and Telegraph Company of Indiana with General Telephone Company of Ohio. Originating at the 200′ Blaw-Knox self-supporting tower in downtown Fort Wayne, Indiana, signals are beamed to a 170′ Blaw-Knox guyed tower on the outskirts of Antwerp, Ohio. From this mid-point, messages terminate at the 150′ Blaw-Knox self-supporting tower in Bryan, Ohio.

Excellent toll service is now provided subscribers in more than 100 Ohio and Indiana communities . . . yet the cost of this efficient microwave-telephone link was less than a normal cable hook-up.

We'd like to help you plan better service for *your* customers. Write today for Booklet 2516, which illustrates Blaw-Knox Microwave Towers and describes Blaw-Knox tower engineering, design, fabrication and erection services.

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BLAW-KNOX EQUIPMENT DIVISION
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**MICROWAVE TOWERS**

Towers for Microwave, AM, FM, TV, Radar . . . guyed and self-supporting . . . steel transmission towers . . .other special structures . . . all custom built for your needs

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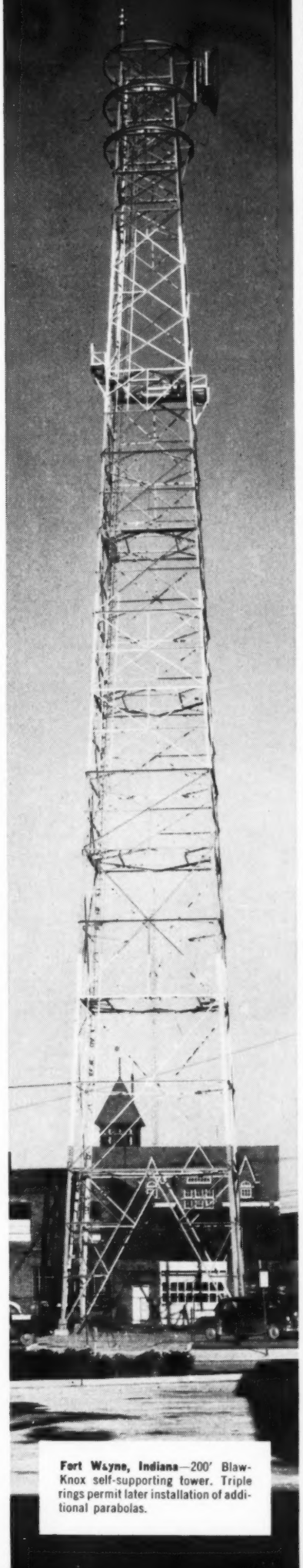
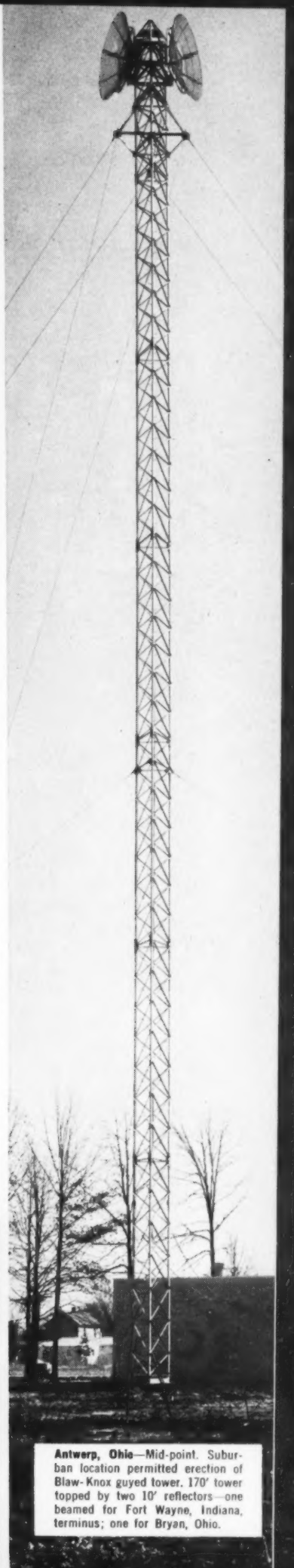


**Fort Wayne, Indiana**—200′ Blaw-Knox self-supporting tower. Triple rings permit later installation of additional parabolas.



**Antwerp, Ohio**—Mid-point. Suburban location permitted erection of Blaw-Knox guyed tower. 170′ tower topped by two 10′ reflectors—one beamed for Fort Wayne, Indiana, terminus; one for Bryan, Ohio.

## L. F. Morrison Retires After 42 Years Service

After 42 years of continuous service in the Independent telephone industry, Loyd F. Morrison, vice president and director of the Iowa Continental Telephone Co., Grinnell, announced on Aug. 16 his retirement from active service with the company, effective Sept. 1.

Mr. Morrison began his telephone career with the Oskaloosa (Iowa) Home Telephone Co. in 1914.

L. F. MORRISON

His next association in the telephone industry was with the Washington (Iowa) Telephone Co., in which he acquired a financial interest.

The Washington company later became a part of the Iowa Continental Telephone Co., a Gary Group company, and Mr. Morrison continued as operating head of the company's various properties in Iowa.

He also served as vice president, general manager and director of the Iowa Telephone & Telegraph Co. and the Interior Telephone Co., both of which later became a part of Iowa Continental.

Also, he was president of Middle States Utilities Co. of Iowa.

Gary Group companies are now part of the General Telephone System.

After suffering a heart attack in October 1949, Mr. Morrison was obliged to give up the responsibility of directing operations, but continued as vice president, acting in an advisory capacity and performing other official duties.

Active in trade associations, Mr. Morrison served two terms as president of the Iowa Independent Telephone Association and has been a director of the organization for 25 years.

He served two terms as president of the Tom Griffith Chapter of Independent Telephone Pioneer Association, and also a director of the chapter. At present, he is an honorary member of the association.

During World War I, he held the rank of sergeant-major in the army.

## Burmese Studies Telephone Practices at N. Y. Company

As a Norwich, N. Y. newspaper reported it recently, Rangoon, Burma, is a long way from East Park Place, Norwich, but for a 39-year-old father of eight children it is just a chapter in the slightly fantastic story of a Burmese telephone worker who graduated from college in 1941 and now finds himself a senior at Rensselaer Polytechnic Institute, Troy, N. Y.

Slightly built Saw Maurice Yah never dreamed 15 years ago that he would spend three years as a student at an American University learning electronics and physics, or spend a summer in a small upstate New York city observing the telephone business.

But that is exactly what has happened to Yah, who is a Burmese telephone company engineer in Rangoon.

Actually Maurice isn't surprised at anything that happens to him anymore; however, the Chenango & Unadilla Telephone Corp., Norwich, seems surprised at Yah and his tale, the newspaper stated.

For while Maurice knows much about us and our country, through American motion pictures, we as a people don't know very much about him and his country. Yah is a product of the changing face of Asia for when the British gave freedom to Burma, the government, which took over the telecommunications system in that country, needed trained Burmese to operate the setup.

That is where Yah came in. He was a graduate of Rangoon University, class of 1941, and had been an employe of the company under British rule.

When the British left, Yah moved into a position of importance as an assistant engineer with a company which had 10,000 subscribers, 8,000 of them being in Rangoon and the others in the rest of Burma.

The government felt that Maurice's position warranted more education in electronics and physics so they arranged for family-man Yah to fly to the United States and attend RPI under State Department sponsorship.

Easy-going Yah has demonstrated in typical Far Eastern style a willingness to learn about every thing American, from TV to "knocking around" in his 1953 sedan.

And whereas many people become bored with things before the newness is gone Yah expresses interest in everything. In English sprinkled with American slang picked up during his three years of study in the United States, Yah, quietly and sometimes inaudibly will comment on his encounters with traditional American institutions such as television and football.

Of television Yah said this: "Watching it is worse than eating peanuts. You can't stop."

Yah explained that when he first landed in New York a room clerk at the hotel at which he was staying asked if he wanted TV in his room. Yah said "yes" and the set was installed. He became so fascinated with the device that he watched the thing for a whole week. Normally Maurice is more blasé about things.

Football was tabbed a "crazy affair," while snow, which Yah had never seen, is "too cold—can't sleep."

The only hobby Maurice admits to is music. He said he likes to "fiddle" with stringed instruments in his native Burma.

Yah has one more year here in the United States and then he will return to Rangoon, his job and his family, which range from a two and one-half year old daughter he hasn't seen to a 17-year-old son who is attending Rangoon University.

Maurice is also a product of a large family of eight children and his father is a supervisor in education in Burma today.

During the past weeks he has gone through the entire process of telephone work while observing at the C&U company, according to the newspaper.

*(Please turn to page 49)*

### Answers to Questions On Page 38

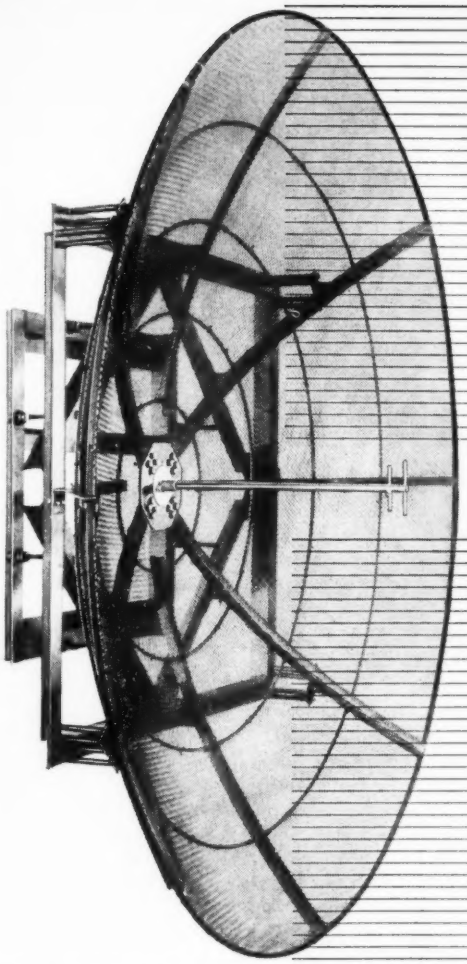
(1) The chief operator.

(2) To assure proper operation of all the LD terminals and telephone numbers that are provided for these warning calls.

(3) It consists of a ringing and talking test.

(4) Reach the telephone number or LD terminal specified for your particular office and when the station answers say, "This is the Telephone Company testing." If there is no apparent trouble say, "That is all, thank you."

(5) All trouble encountered should be reported to the Plant Department immediately.



For MICROWAVE that stays right on the beam . . .

# LENKURT...with "package plan" engineering

More and more telephone companies look to Automatic Electric for Lenkurt Radio Equipment, engineered specifically for telephone application. Lenkurt's Type 72C equipment has a capacity of up to 360 voice channels in the 900-megacycle band. In this frequency range, longer hops are possible—over any terrain, in any kind of weather. A 72C Radio System is especially desirable for use in spanning bodies of water, since fading due to reflections can be kept at a minimum.

And now that Automatic Electric and Lenkurt offer "package plan" engineering, it's easier than ever for you to own, maintain, and use carrier and radio equipment. Our communications specialists provide complete "beginning-to-end" service, including *Specific Recommendations . . . Detailed Specifications . . . Finest Equipment . . . Complete Construction . . . Expert Installation . . . Staff Training . . . Follow-Up Counsel.* For more information, *write or call* Automatic Electric Sales Corporation, 1033 West Van Buren Street, Chicago 7, Illinois (HAymarket 1-4300). *In Canada:* Automatic Electric Sales (Canada) Ltd., Toronto. *Offices in principal cities.*

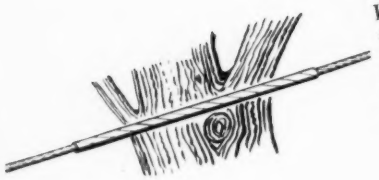
AUTOMATIC ELECTRIC

*Originators of the dial telephone • Pioneers in automatic control*

GENERAL SYSTEM INDEPENDENT

# *All-star cast of line supplies*

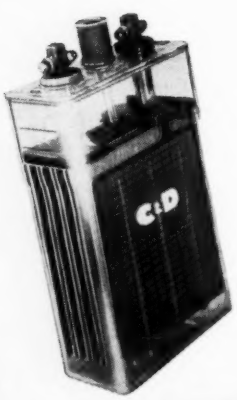
# *featured by* KELLOGG



**Preformed Plastic Line Guards.** Ideal for protecting covered cables or conductors from abrasion by trees or other objects. Fit securely like metal line guards — are easily installed. PREFORMED LINE PRODUCTS COMPANY.

**Exchange Area Cable** for aerial and duct use. TELECABLE* has polyethylene insulation and sheath, excellent transmission qualities and resistance to weathering. 202 Pair and smaller. Approved by REA. *TELECABLE is a trade-mark of WHITNEY-BLAKE CO.

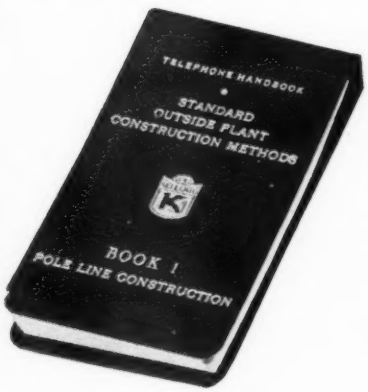
**Corrosion Resistant Crapo Stainless Steel Cable Lashing Wire, Type 430,** is available in .045", .065" and .061" diameters. Crapo Galvanized (C Coated) Steel Cable Lashing Wire is available in .091" and .061" diameters. Made by INDIANA STEEL & WIRE CO., INC.



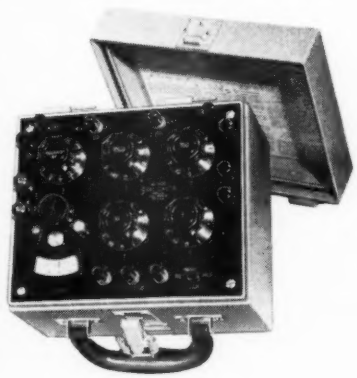

**Extra-Life Telephone Battery** — PlastiCal (lead calcium grids) have expected life of 25 years in full-float service. PlastiCell (high tensile, special alloy grids) have a life expectancy of 14 years. Made by C&D BATTERIES, INC.

XUM

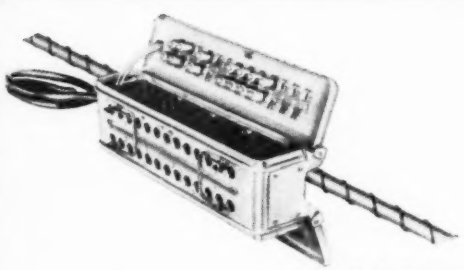
**Long Service Life and Low Plant Costs** go hand in hand with the installation of ENDURPRENE—The Neoprene Drop Wire available in Copperweld and Bronze. This flexible and easy-to-handle wire is made by GENERAL INSULATED WIRE WORKS, INC.




**Kellogg's Standard Outside Plant Handbook** now available at special price while quantities last. Reduced to $2.75 a copy with ten or more copies priced at $2.50 each. Every phase of outside plant telephone pole line construction is covered in book.



**Shallcross No. 6100 Wheatstone Bridge** — This portable instrument is designed to measure any resistance from 1 ohm to 1 megohm, locate grounds, crosses, opens and shorts by the Murray, Varley, Hillborn or Fisher Loop and Capacitance tests. Can be operated by repairman wearing gloves. SHALLCROSS MFG. CO.



**The Cook Stranterm** available with 11, 16 or 26 pair cable stubs. Only strand mounted Cable Terminal designed for a flexible system of selective discharger protection. Supplied with either plastic or lead sheathed cable stub. COOK ELECTRIC COMPANY.

Everything that Kellogg ships is a star in its field. Each item has passed a rigid "screen test" and proved that it can perform well under the most difficult conditions.

Your order is shipped to you promptly from a point near you. There are 7 warehouses and more than 100 supplier distribution points across the nation.

KELLOGG
A DIVISION OF IT&T

**KELLOGG SWITCHBOARD AND SUPPLY COMPANY**
*A Division of International Telephone and Telegraph Corporation*
**Sales Offices: 79 W. Monroe St., Chicago 3, Ill.**
**Phone: DEarborn 2-0750**

**KELLOGG Branch Warehouses and Offices:**

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REliance 5-5445

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St. Paul 4, Minnesota
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1515 Turtle Creek Blvd.
Dallas 2, Texas
Prospect 5191

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# construction and maintenance DIGEST

- **Preformed Line**
- **Quick work on cable**
- **What's in your arms**
- **New small insulator**
- **More power—less space**

Published every week to help you get the most out of your materials and supplies dollar

*by C. J. Reynolds, Stromberg-Carlson Company*

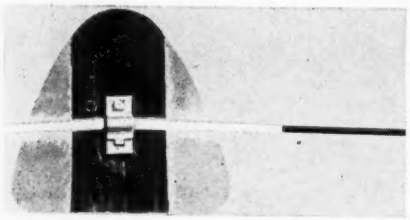
Two dividends are yours when you order supplies from Stromberg-Carlson. First, you get the protection of a double guarantee—ours and the maker's. This assures you of getting the finest products, backed by our 62-year reputation. Second, your support is used to further the art of telephony. We're knee-deep in this industry as a full-time job, not a side line, and your supply business plays a big part and helps us continue our research for new and better telephone equipment.

### Protects plastic cable from pressures, abrasion

Ties, clamps, trees and other objects are rough on plastic-covered self-supporting cable.

The perfect protection is a Preformed Line Guard—available in metal or plastic.

Metal line guards are specially useful for supporting cable at poles. They are a must for tangent supports. They spread the pressure around – preventing slippage and preventing damage to the plastic covering.



Available in standard 6-ft. lengths. Other lengths on request.

Plastic line guards are ideal for protecting and insulating conductors that pass through trees, close to buildings, or over other lines.

Both install easily. Just wrap them around cable. You need no tools, no clamps or clips.

Order from Stromberg-Carlson.

### New Time Saver Terminal

When stringing plastic cable, the loop-through PLX Cable Terminal is the one to use.

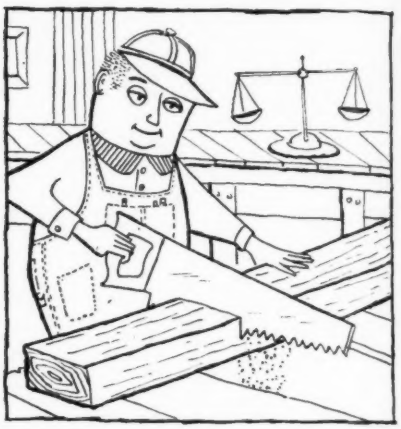
The Cook PLX Cable Terminal for plastic cable.

It's the easiest to install, most economical terminal made. No stubbing—the cable is looped in and out. No splicing—the cable is continuous right through the terminal. No potting—just put a Neoprene grommet in place and secure. These features mean time saved, and time saved is dollars in your pocket.

Made with a heavy galvanized steel frame and cable chamber by Cook Electric Company, it utilizes the famous XB Bakelite faceplate.

Available in 6, 11, 16 and 26 pair sizes for cable from 11 to 51 pair, 19 gauge or smaller. When ordering, specify cable to be used with terminal so correct size grommet will be included.

### $1 worth of cross-arms?



When you spend a dollar on plant investment you want a dollar's worth of material and service.

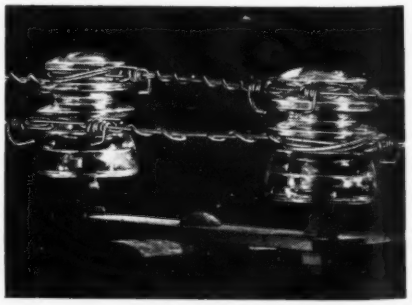
That's what you get with cross-arms from Stromberg-Carlson. At American Cross-Arms, Inc., they make just one thing – cross-arms. Standards and special arms, Douglas fir and pine, big and small orders.

Their experience and Stromberg-Carlson's excellent service come with each order, no matter what its size. You get fast delivery from strategically located stocks.

### Smaller, lighter insulator for point transposition

Here's the answer to your demand for a small, light insulator for point transposition.

Weighing almost 25% less than its predecessor, the Hemingray Number 56 insulator has several important advantages. It's grooved just right to hold wire firmly. It's small and easy to install. Requires **no** special hardware, and goes on standard pins.



You'll get years of reliable service from each Hemingray insulator, because they are unaffected by sudden or seasonal temperature changes, do not age or deteriorate. All surfaces are, of course, impervious to moisture.

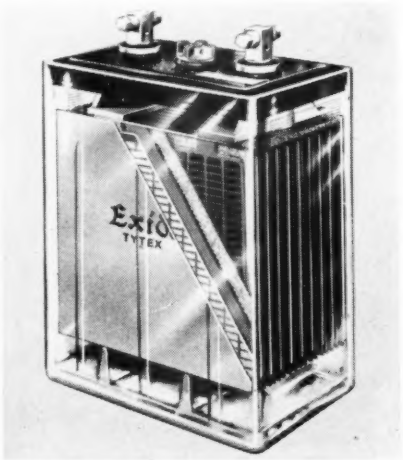
For faster line work on rural lines, this one-piece insulator can save you installation time, and maintenance costs. It's backed by the vast experience of its manufacturers, who have made Hemingray insulators the "World standard since 1870."

**Taper-less battery saves space**

How would you like to pack more power in less floor space?

The essential feature of the Exide Tytex Battery is the manner in which the element is held together in a strong compact unit. This feature has been achieved by assembling its element in a molded glass jar having no taper in its vertical sides . . . thus more power in less space.

Among other features of the battery are the balanced positive and




Exide Tytex Battery has vertical sides.

negative plate design which, together with the use of Mipor separators and Vitrex retainers, contribute to long battery life, less weight per ampere hour output and more attractive looking cells which improve the appearance of the installations.

*Distributed by*

**STROMBERG-CARLSON**

A DIVISION OF GENERAL DYNAMICS CORPORATION

Sales Offices: Atlanta 3, Chicago 6, Kansas City 8, Rochester 3, San Francisco 3.

For one week recently he was the special charge of Bart Gifford, assistant chief engineer of the company.

There is a feeling among C&U employes that Maurice is tabbed for future stardom in the Burmese telephone system and their work in helping him understand how a typical Independent telephone company operates may aid in increasing good will between the United States and Burma at a time when understanding between the East and West is needed.

Rangoon is a long way in miles from Norwich, but not so far in understanding now as it was, concluded the newspaper.

## Kellogg Announces Changes In Executive Staff

George T. Scharffenberger, vice president and general manager of Kellogg Switchboard & Supply Co., Chicago, a division of International Telephone & Telegraph Corp., has announced the following executive changes: William P. Hollis, former sales manager, has been elected vice president and director

W. P. HOLLIS

of marketing; O. C. Bailey has been named sales manager, and Thomas P. Leddy, formerly an assistant vice president, has been elected vice president in charge of government relations.

Mr. Hollis has been associated with various IT&T companies since 1944. During World War II, he spent two years in the Washington, D. C. and New York City offices of the Chief Signal Officer, U. S. Army, where he had charge of the commercial aspects of the teletypewriter networks.

Mr. Hollis began his career in the field of telephony with Northwestern Bell Telephone Co., Omaha, Neb. He subsequently became commercial manager of the telephone properties for Central Electric & Gas Co. at Sioux City, Iowa, and Sioux Falls, S. D. In

O. C. BAILEY

this latter capacity, he was instrumental in converting many telephone exchanges in the midwestern states from manual to automatic operation.

Mr. Bailey began his career with Southwestern Bell Telephone Co. in Fort Worth, Tex. He served three years as a flying officer with the Air Force during World War II in the Middle East and China-Burma-India Theaters of Action.

After the war, he joined Kellogg as a field sales representative and has since served as district manager for

T. P. LEDDY

the states of Texas, Louisiana, Oklahoma and Arkansas; assistant manager of the western division, with headquarters in Kansas City, Mo.; and manager of the southwestern division, which he organized, in Dallas, Tex. He was assistant sales manager in charge of field sales activities at the time of his recent promotion.

Mr. Leddy has been associated with the IT&T companies since 1943 when he joined the Federal Telephone & Ra-

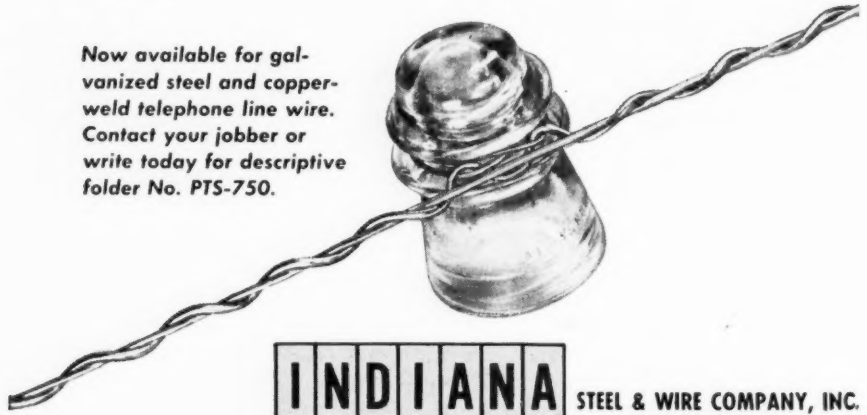
SOMETHING **radically new** IN TIES

**Here's a new — radically new — time and labor saving method of "tying-in" telephone line wire. The tie splint can be tied to the insulator BEFORE the insulator is mounted on the pole.**

**Crapo** Pre-Tied Splints completely revise older methods of tying. The splint, simplified tie and insulator can be pre-assembled on a "production line" basis in the shop or at the job site. This saves time, cuts tying costs and minimizes the chance of making loose ties.

**Crapo** Pre-Tied Splints protect the line wire against wear and abrasion because there is no contact between line wire and insulator and line wire and tie wire. The line wire can be removed, re-sagged and replaced without disturbing the tie wire.

***Now available for galvanized steel and copper-weld telephone line wire. Contact your jobber or write today for descriptive folder No. PTS-750.***



INDIANA STEEL & WIRE COMPANY, INC.
MUNCIE, INDIANA


dio Co. of Clifton, N. J. He was vice president, general manager and a director of Federal Electric Mfg. Co. of Montreal, Canada, before going with Kellogg. In his new capacity, he will be responsible for sales involving government requirements, administration of government contracts and related activities. He is a member of the National Industrial Security Administration, Armed Forces Communications & Electronics Association and the National Association of Cost Accountants.

## E. T. Coon Named to Dow Chemical Post

Edward T. Coon has been assigned to the position of product manager of industrial herbicides in agricultural chemicals sales, The Dow Chemical Co., W. W. Allen, manager, has announced.

In the new post, Mr. Coon directs the marketing of Dow's family of

E. T. COON

herbicides for selectively clearing railroad and utility right-of-ways, roadsides, plant sites and irrigation and drainage ditches. He reports directly to T. L. Bendall, supervisor of the department's industrial products section.

Mr. Coon had previously served as a sales representative handling agricultural chemicals in the company's Michigan territory. A Dow employe since February 1951, he also was connected with the company's agricultural field research facilities at South Haven, Mich.

Mr. Coon received a B.S. degree in forestry from Michigan State University in 1948.

## Freedom Under Law

"The man who is guided by reason is more free in a state, where he lives under a general system of law, than in solitude, where he is independent."—BENEDICT SPINOZA, in *Ethics*, 1677.

## Stromberg Representatives Named for Pacific Coast

Appointment of Robert E. Wohlberg and S. W. Bailey as telephone sales representatives in the Pacific Coast territory of Stromberg-Carlson, a division of General Dynamics Corp., has been announced by T. C. Thompson, general sales manager of Stromberg-Carlson's telephone division.

Both men have completed a training course at the company's Rochester headquarters, and have returned to their respective territories. Mr. Wohlberg will work in the San Francisco area, and Mr. Bailey has been assigned to the Idaho, Utah and Montana territory. These appointments constitute additional Stromberg-Carlson representation, to provide more complete service to telephone customers in the fast-growing West, Mr. Thompson said.

Mr. Wohlberg came to Stromberg-Carlson from Lincoln, Neb., where he was born, educated, and held his first job with the Lincoln Telephone & Telegraph Co. Beginning as a mailboy, he became successively warehouseman, shopman, installer, draftsman, and equipment engineer. In the latter position he worked directly with Paul Henson, chief engineer, renewing a boyhood association.

R. E. WOHLBERG

During World War II, he left the Lincoln company for duty as a fire control operator on a U. S. Navy destroyer, and served in both the Atlantic and Pacific. He returned in 1945 to resume his job.

Mr. Bailey also has come to Stromberg-Carlson after many years of experience in telephony. After a boyhood in Manitowoc, Wis., he went to college at the University of Alaska, and stayed on with the Public Utilities Co. at Ketchikan, as lineman, installer, and central office equipment man.

During the war he changed jobs, but not location, serving the Coast Guard in Alaskan waters as electrician's mate, 1/C. He returned to the Ketchikan

S. W. BAILEY

Public Utilities Co. in time to be of valuable assistance to B. I. Palmer during installation of the XY dial system for the city.

In 1954, Mr. Bailey left Alaska to become plant supervisor for the Farm-

**Install it in only 14¾ minutes!**

To install the Stromberg-Carlson Hands-Free Telephone, you connect the line cord, plug in to a 110-volt AC outlet, and attach the mike cord. *It's easy to see the money-saving advantages of such fast installation,* especially when compared with other types. For further information write Stromberg-Carlson Company, Division of General Dynamics Corporation, Rochester 3, N. Y.

**STROMBERG-CARLSON**

HANDS FREE TELEPHONE

**It gives you privacy...**

With the Stromberg-Carlson Hands-Free Telephone, if you don't want the other party to hear the conversation around you, simply press the microphone cut-off button. To resume 'phone conversation, simply release. For further information write Stromberg-Carlson Company, Division of General Dynamics Corporation, Rochester 3, N. Y.

**STROMBERG-CARLSON**

HANDS FREE TELEPHONE

# at Delta Telephone and Telegraph Co.

## It's C&D Calcium Batteries for EXTRA life

One of C&D's typical installations in use at the Delta Telephone and Telegraph Co., Courtland, Calif. The 24 PlastiCal (lead-calcium) cells, Type PCE-420, have a 420 A.H. capacity.

In the growing community of Courtland, California, the Delta Telephone and Telegraph Co. relies on the continuous, dependable service provided by C&D PlastiCal batteries. For here, in the historic Delta region, the Delta Telephone and Telegraph Co. has found that C&D has the answer to telephone battery needs.

**When you order your next telephone battery, specify C&D. For with C&D, you get:**

1. **One-piece, permanently-sealed plastic case. Entire unit is shock-resistant, lighter, and more compact than glass or rubber.**
2. **Exclusive suspended and supported plate construction eliminates leaks due to internal stresses.**
3. **Easier maintenance, because patented Post Seal eliminates acid creepage.**
4. **Lower shipping costs. Light plastic case reduces total in-place cost.**

**You can order C&D batteries from your equipment supplier.**

Write for bulletins!

**For details and specifications on C&D telephone batteries, write for Bulletins T-527 and T-528.**

C&D BATTERIES, INC.
of Conshohocken, Pa.

Manufacturers of Industrial Batteries since 1908

**Sales and Service Offices in Principal Cities from Coast to Coast**


ers Mutual Telephone Co. of Lynden, Wash. The company had just embarked on a large XY dial conversion program involving 10 exchanges. When Mr. Bailey left to join Stromberg-Carlson in May the program had been completed.

## Automatic Names Zidlicky To Sales Promotion Post

James M. Zidlicky has been named assistant sales promotion manager of Automatic Electric Sales Corp.

In his new position he will be responsible for helping plan, coordinate

J. M. ZIDLICKY

and assist in the execution of various sales training, sales promotion, and merchandising programs; and will supervise state convention planning and exhibits.

Mr. Zidlicky joined Automatic Electric this year after serving in various sales capacities with Leich Sales Corp.

During World War II, he served with the Infantry and Army Medical Administrative Corps, attaining the rank of Major.

## IBM Appoints Two Special Representatives

International Business Machines Corp. has announced the appointment of William F. McCarty as special representative in the communications department. Mr. McCarty, who has been serving as a sales representative in Denver, will coordinate sales activities and planning of applications of IBM equipment in the communications field. He will also conduct classes for customer personnel and seminars for IBM sales representatives, to keep them abreast of new techniques in machine accounting and data processing as applied to the communications industry.

IBM also announced the appointment of Lee R. Jones as special representative in the public utilities department, with headquarters in Dallas. In his new post Mr. Jones will coordinate sales activities and planning of applications of IBM equipment to meet the needs of companies in the public utilities field.

## Burd Named Consultant By Sequoia Process Corp.

Harry G. Burd, former president of the Superior Wire and Cable Co. of Hickory, N. C., has been appointed special consultant to the Sequoia Process Corp., of Redwood City, Cal., for its telephone cable manufacturing.

Mr. Burd, whose experience in cable manufacturing dates back to 1910, will assist the company in all phases of its new telephone cable operations, including production, sales, and engineering. Sequoia Process Corp., whose primary product until this time has been electronic wire and cable, recently began telephone cable manufacturing at its plant at Redwood City.

A graduate of Cornell University, Mr. Burd began his career in 1910 with the Standard Underground Cable Co. of Pittsburgh, Pa., working on the design, engineering, and field installation of both paper lead telephone cables and power cables.

H. G. BURD

In 1920 he became assistant to the president of the National Conduit & Cable Co. at Hastings-on-Hudson, N.Y. The company later became one of the major divisions of Anaconda Wire & Cable Co. as a result of a merger, and Mr. Burd continued with the new organization as manager of power cable sales. While with Anaconda, he was also active in the engineering of new methods for splicing and terminating cable.

In 1949, Mr. Burd entered the relatively new field of plastic insulated cable when he left Anaconda to join the Ansonia Electrical Co. at Ansonia, Conn. From 1949 to 1953, Mr. Burd served as vice president of sales, and he also helped to expand the company's newly-formed telephone cable division.

In 1953, after originally planning to retire, Mr. Burd at the invitation of a group of industrial leaders in the southeast, organized Superior Wire & Cable Company.

Mr. Burd, who resigned from Superior last year, participated in the initial studies that led to Sequoia Process's decision to expand into the telephone cable market, and he also assisted the company on an advisory basis during the initial phases of its manufacturing this year. Sequoia's plant is the first on the west coast specializing in the manufacture of plastic-insulated telephone cable.

## J-M Begins Construction of Seventh Transite Plant

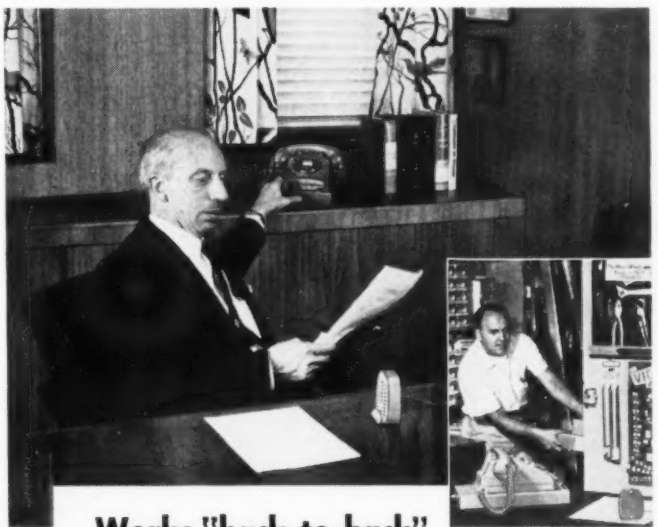
Construction will be started soon on another new Transite asbestos-cement pipe plant to be located at Denison,


**Now available in modern gray**

The Stromberg-Carlson Hands-Free Telephone is styled to harmonize with modern offices. The instrument, the mike—even the cord—offer you the dignified good looks of modern gray styling. For further information write Stromberg-Carlson Company, Division of General Dynamics Corporation, Rochester 3, N. Y.

STROMBERG-CARLSON

HANDS FREE TELEPHONE



**Works "back-to-back"...**

The Stromberg-Carlson Hands-Free Telephone doesn't interfere with your other telephones. It works perfectly "back-to-back" with any other instrument, including other Hands-Free Telephones. For further information, write Stromberg-Carlson Company, Division of General Dynamics Corporation, Rochester 3, N. Y.

STROMBERG-CARLSON

HANDS FREE TELEPHONE

Tex., it was announced on Aug. 22 by A. R. Fisher, president of Johns-Manville Corp.

"The Denison plant is part of an approximate 40-million-dollar Transite pipe expansion program initiated this year," Mr. Fisher said. "Ground has already been broken for a large plant in Stockton, Cal. and additional pipe production facilities have been or are being installed at J-M plants in Marrero, La.; Waukegan, Ill.; Watson, Cal.; and Manville, N. J."

The Denison plant will be J-M's seventh Transite Pipe plant. In addition to the locations above, the company produces asbestos-cement pipe products at its Toronto, Canada, location.

J-M's Transite pipe is used in the telephone and power industries for electrical conduits.

## B. H. Ballard Jr. Named To National Co. Post

Benjamin H. Ballard, Jr., has been appointed to the post of sales manager for consumer products by National Co., Malden, Mass., according to an announcement by Joseph H. Quick, president.

Mr. Ballard has served as the company's assistant sales manager and, recently, as manager of distributor sales. In his new position, he will be responsible for sales management of all the consumer electronic products made by National Co., including communications receivers, high fidelity music systems, and various electronic components. He has been with National Co. since 1954 after serving for several years as New England district sales manager for Westinghouse consumer products.

B. H. BALLARD JR.

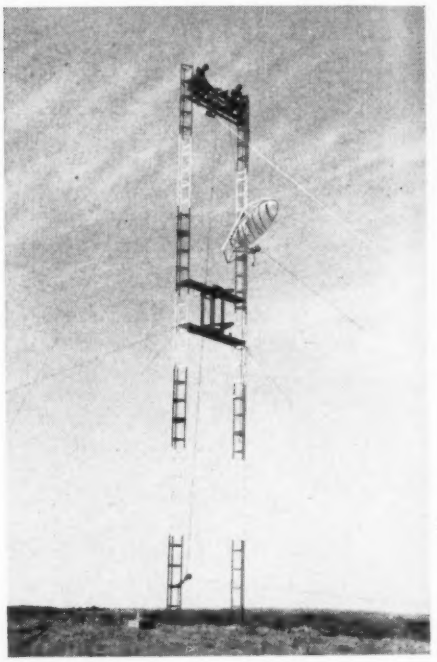
Mr. Ballard will report to Stanley L. Rudnick, general sales manager, commercial division.

## Stromberg-Carlson Installs Microwave Radio Relay Link

Construction of a 60-mile experimental microwave radio relay link extending east and south from Rochester to Cheshire, N. Y., in Ontario County, has been started by Stromberg-Carlson, a division of General Dynamics Corp.

Completion of the system was scheduled for about Aug. 25, according to John E. Troutman, head of the microwave development section of Stromberg-Carlson's telephone division.

The microwave link will be used primarily for testing, research and development in connection with the multiplexing equipment which Stromberg-Carlson builds for telephone companies and other communications applications, according to Mr. Troutman, who has charge of the project.



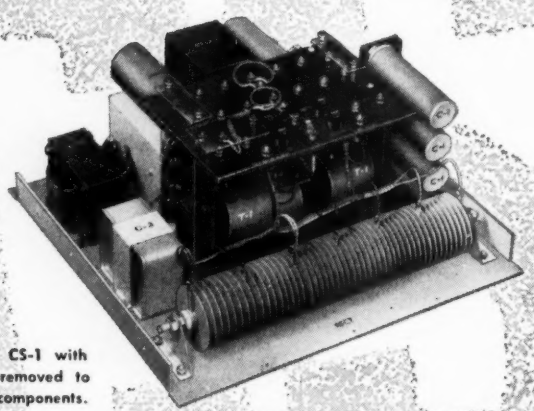
**Parabolic antenna, or "dish," is hoisted to the top of the 60-foot tower in Penfield, east of Rochester, first relay point in Stromberg-Carlson's experimental microwave radio relay link. Other relay towers are located near Macedon, and near Cheshire, completing the 60-mile loop which will have its main terminal station at the Stromberg-Carlson plant in Rochester.**

Multiplexing is the process of "stacking" many voice, telegraph, teletype or other signals so that they can be transmitted simultaneously over a single microwave radio beam.

The link also will serve as a demonstration facility by which Stromberg-Carlson multiplexing equipment can be shown in operation to potential customers, Mr. Troutman pointed out.

In addition, one of the stations in the


FLOTROL Carrier Supply units



Model CS-1 with cover removed to show components.

FLOTROL CARRIER SUPPLY UNITS are designed to supply regulated 130 volt plate current for carrier or repeater operation. The units normally operate from 115 volt 60 cycle single phase power supply, and will automatically transfer to a built-in standby vibrator which operates from the exchange battery upon power interruptions, maintaining uninterrupted plate current during power failures. Regulated voltage is maintained during both normal and standby operation. CS units are housed in attractive light gray steel cabinets, and can be mounted on the wall or in a 19-inch relay rack.

LORAIN Products Corporation

1122 F STREET • LORAIN, OHIO • TELEPHONE 81171
POWER EQUIPMENT FOR COMMUNICATIONS AND INDUSTRY

FLOTROL PARTNERS IN DEPENDABILITY SUB-CYCLE

link, on Hathaway Hill, in East Penfield, also will be equipped with special apparatus for assisting the radio astronomy laboratory of Cornell University in research on "tropospheric scattering" of short-wave radio signals. This station will have two transmitters, one delivering 25 and the other 50 kilowatts, which will send out signals that will be received by Cornell laboratory's field station near Ithaca, a distance of 72.3 miles. This work will be done under the direction of Dr. William E. Gordon, of Cornell, an outstanding authority on this subject.

The main terminal station of the microwave link will be a tower and laboratory building at the main Stromberg-Carlson plant in Rochester. From there transmission will be to Hathaway Hill, on Sweet's Corners Road, East Penfield, thence to a station near the intersection of the Wilkinson and Wayneport Roads, about 2½ miles southwest of Macedon, thence to a hilltop near Kear Road, about 2½ miles south of Cheshire, and thence back to Rochester. Transmission will be two-way around the entire loop, so that all conditions of normal operation of such systems can be duplicated in this link.

Longest leg of the link is that from Cheshire to Stromberg-Carlson's plant —26.6 miles. Two other legs, from the plant to Hathaway Hill, and from there to the Macedon station, are exactly the same length, 7.8 miles, and the other, from Macedon to Cheshire, is 17.35 miles.

## GE Appoints W. Torbick To Executive Sales Post

The appointment of William Torbick, formerly district sales representative for General Electric radio communication equipment in Syracuse, to the position of district manager covering central, eastern, and northern New York as well as some parts of eastern Pennsylvania, was announced on Aug. 5.

Mr. Torbick's promotion was disclosed by L. R. Sheeley, manager of sales for the General Electric Communication Equipment Section, which has headquarters at Electronics Park, Syracuse, N. Y. The new manager will maintain district offices in the Les-Lee Building in Syracuse.

In his new position, Mr. Torbick will be in charge of sales of G-E two-way radio units to police and fire departments, and commercial firms, such as taxi companies and trucking businesses.

A native of Chicago, Torbick attended high school at Bayfield, Wis., and studied electrical engineering at the Milwaukee School of Engineering. He joined General Electric's X-Ray department in 1948 and transferred to G-E communication equipment sales in 1950.

WILLIAM TORBICK

## More Jobs and Risk Capital

". . . risk capital is vital if the country is to provide the additional 20,000,000 jobs economists say we must provide by 1975."—COLA G. PARKER, *president, National Association of Manufacturers.*

**Does not howl!**

With the Stromberg-Carlson Hands-Free Telephone you can place the mike close to the handset without annoying squeal. And there's Automatic Volume Control to avoid "boom" when someone talks too close to the mike. Just two of a good dozen exclusive features. For further information write Stromberg-Carlson Company, Division of General Dynamics Corporation, Rochester 3, N. Y.

STROMBERG-CARLSON

HANDS FREE TELEPHONE

**The mike is non-directional...**

The microphone of the Stromberg-Carlson Hands-Free Telephone works from side, rear, and front. Put it right in the middle of a conference group. No need to pass it around. A 12-foot cord lets you place the mike anywhere convenient. For further information write Stromberg-Carlson Company, Division of General Dynamics Corporation, Rochester 3, N. Y.

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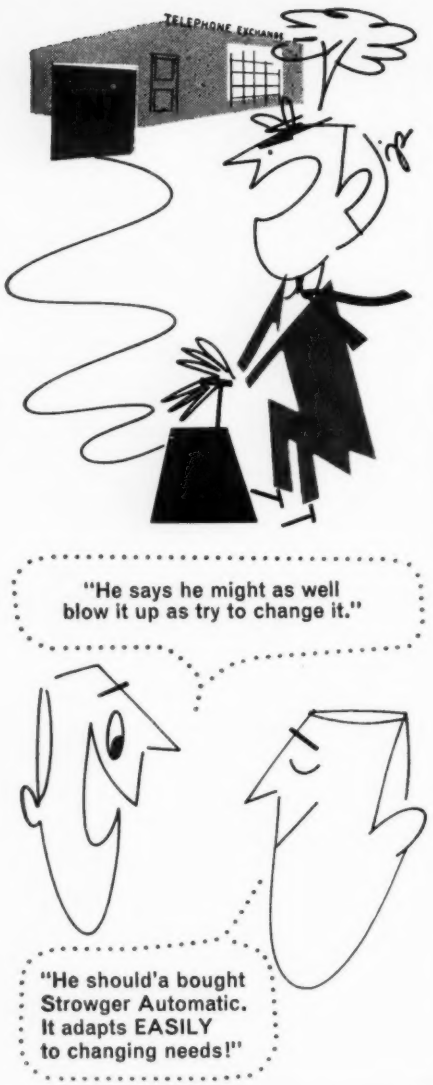
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AUTOMATIC ELECTRIC

ORIGINATORS OF THE DIAL TELEPHONE

GENERAL SYSTEM

INDEPENDENT


# Helpful Literature

**ENVELOPE STUFFER**—A new envelope stuffer, titled "Day Brightners," designed to help telephone companies go after new sources of revenue is now available free from Automatic Electric Co.

In two colors, the new stuffer describes the "extra" services that subscribers often do not know about, such as a telephone outlet in the patio, a buzzer in adjoining room or office, a keyswitch so you can answer several telephones from one desk, an outdoor telephone, noise killers, telephone answerers, telephones that talk louder, and other services. Request HL305.

•

**SELENIUM CONTACT SELECTORS**—A definitive special bulletin on selenium contact protectors which explains the operation, uses and advantages of this newly developed product, has been issued by the components division of the Federal Telephone & Radio Co., a division of International Telephone & Telegraph Corp.

The bulletin, entitled "The A-B-C's of Contact Protection," is for use by design engineers and components distributors who desire to know more about the new selenium protectors which are used to eliminate arcing between contacts in inductive circuits.

The "A-B-C" bulletin is divided into three sections. The first section reviews the entire problem of arcing, its causes and effects, the methods which have been used to combat arcing and their disadvantages. The second section explains exactly what a selenium contact protector is and how its works, and the general advantages of the product. The third section tells how to select the proper selenium contact protector for specific purposes, explains the coding of protector type designations and gives detailed information on current, voltage, frequency, and temperature considerations.

The bulletin is illustrated with diagrams which further explain points covered in the text. Additional diagrams are provided in a printed technical sales brochure (Form F558-A) which is provided with the bulletin. The brochure also lists the various types of selenium protectors which are available. Request HL306.

•

**SPLICING KITS**—A new 12-page booklet containing instructions and application information for the entire line of "Scotchcast" brand splicing kits has been announced by Minnesota Mining & Manufacturing Co.

The illustrated four-color booklet describes in detail the "Unipak" container of "Scotchcast" electrical insulating resin No. 4 for pouring field-encapsulated splices and the three types of splicing kits with which it is used.

The 82-A series—split mold splicing kits for making in-line splices for weather exposed or direct burial locations—is described, showing the relative sizes of the three available kits, what they include, and how they are used.

The 90-B1 kit for making wye or tap splices with a split-mold is pictured and step-by-step instructions are given. This kit is for use in cathodic protection ground bed splicing, street lighting systems and traffic signal systems.

TELEPHONY PUBLISHING CORP.
608 S. Dearborn St.
Chicago 5, Ill.

Please have the manufacturer send me without obligation further information on the products described in the following numbers:

HL305____; HL306____; HL307____; HL308____; HL309____;

HL310____.

Name..... Title.....

Company.....

Street.....

Town and State.....

9/8/56

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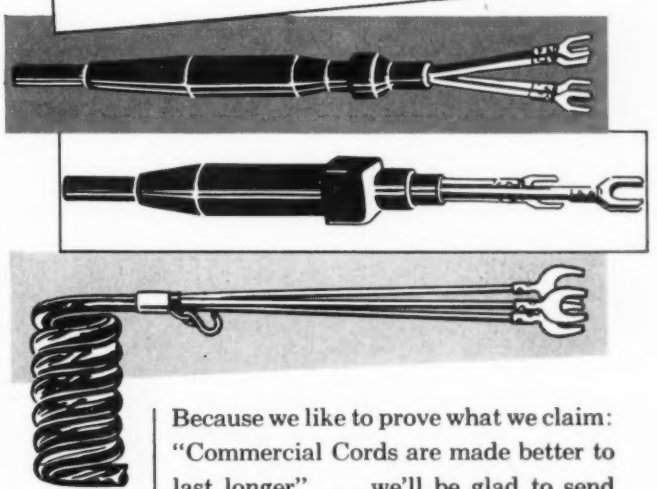

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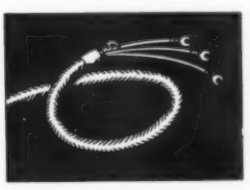

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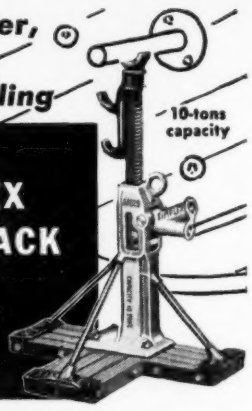


●Here's the reel jack that is strong and stable without hard-to-handle extra weight. An aluminum alloy housing reduces overall weight by 21 pounds, yet maintains full 10-ton capacity. "T" shaped laminated oak base gives solid, safe foundation. Single acting mechanism provides easier operation. Handles reels to 84" dia.; weighs 83 lbs. Furnished with 5' lever bar.

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RE-MO-TROL VTIL-A-TOOL JENNY ROL-TOE

**TEMPLETON, KENLY & COMPANY**
**2557 Gardner Road, Broadview, Illinois**


Also described is the 89 series of kits for communication splices of either the wye or in-line variety.

The last section of the book pictures eight of the many applications in which "Scotchcast" electrical insulating resin No. 4 can be used for making poured splices without a splicing kit. Request HL307.

•

STEEL AND WIRE—The Colorado Fuel & Iron Corp. has made available a fully illustrated and indexed 70-page catalog describing the company's principal products.

The product listing is divided into broad classifications which include semi-finished and hot-rolled steel, heavy and special steel items, rails and accessories, wire and wire products, Wickwire rope, overhead conveying equipment, industrial screens and wire fabrics, hardware products, springs and formed wires, processing belts and various other product lines.

Also included in the bulletin is a directory of CF&I plants and sales offices throughout the country. Request HL308.

•

ASA MEMBERS—The 115 national technical societies, trade associations and public interest groups, and the 2,300 companies which are affiliated with American Standards Association are listed in a new 63-page booklet, "Directory of the Members of the American Standards Association."

It also names the officers and the board of directors of the association. Gives state and city governments, colleges and universities and various individuals affiliated with ASA. Request HL309.

•

ASA PROCEDURES—The ASA also has issued a booklet entitled "How American Standards are Made." This booklet describes the three ways standards become nationally-accepted and approved as American Standards. Tells who makes these American Standards and why, and who uses them.

Explains why the ASA is, how it guards the democratic processes through which American Standards are developed, and how it operates impartially for the manufacturer, the consumer and the general public. Request HL310.

## Hubbard Names R. Waggoner As West Coast Manager

Raymond M. Waggoner, vice president, Pacific Coast sales, for Hubbard & Co., has been appointed vice president and general manager of Pacific Coast operations. His enlarged duties

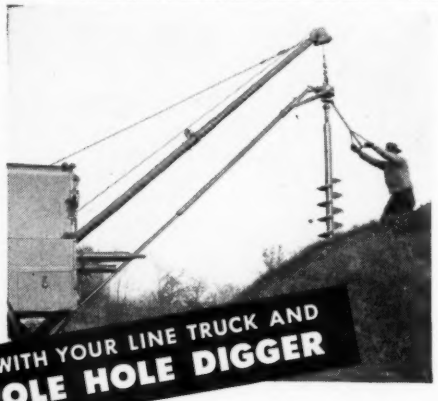
R. M. WAGGONER

will include management of the company's plant at Oakland, Cal.

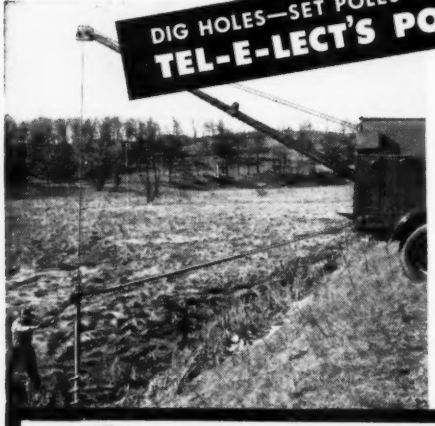
Mr. Waggoner started with Hubbard & Co. in 1922 in the sales department of the electrical materials division, with headquarters in Pittsburgh. He was appointed assistant sales manager, northeastern division, in 1928, and sales manager for the midwest division in 1936.

In 1948 he returned to Pittsburgh as vice president in charge of sales. He was named vice president, Pacific Coast sales, in 1952.


- Reaches hard to get at spots
- Bores holes up to 10 feet deep from any truck position
- Low cost—easy to use—easy to transport
- Industry tested and accepted



DIG HOLES—SET POLES WITH YOUR LINE TRUCK AND
**TEL-E-LECT'S POLE HOLE DIGGER**



When your derrick truck is equipped with a Tel-E-Lect Digger, your crew can dig a hole and set a pole in less than five minutes! This rugged auger, suspended from a front or rear mounted derrick, is raised or lowered by the winch line. Auger rotation power is supplied through a telescoping drive shaft connected to the PTO.

This efficient digger reaches up on a hill, down into ditches, or across obstacles . . . anywhere up to 20 feet behind the truck. The interchangeable hardened steel augers, 8" to 20" in diameter, are built to operate under the most rugged soil conditions.

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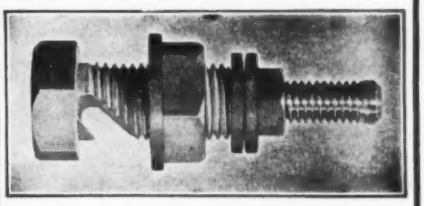

⅝" Hex Steel Body (slotted for No. 10 B.W.G.) Washer and Nut all zinc plated. Brass stud with 2 brass washers held in place with a hex brass nut. For use on iron to copper wire.
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INSTALLER REPAIRMEN wanted for work in Northern California. Good pay and excellent working conditions. Reply sending complete details of past experience to Citizens Utilities Company of California, Box 1789, Redding, Calif.

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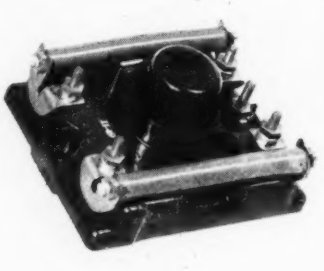

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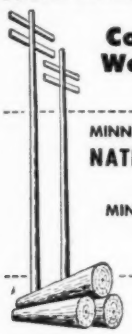

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**Stromberg Carlson 1600 line PBX.** 3 positions, 15 cord ckts. each.

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**$12.50**
**Straight line — harmonic — decimonic —**
**W.E. #302 (S.L. only) also key (extra cost)**
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lots of 10, each $12.50
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12 line $195
20 line 225

**W.E. #506B (modified) cordless,** 5 conn. ckts., 12 CB lines, 2 CB trunks, 3 LB trunks or lines.
New $250
slightly used, recond. 195

**COPPERWELD WIRE, #12 .080, 40% cond. new, gov't. surplus, guaranteed — standard factory coils approx. 100 lbs. — savings to 20% and more in quantity —**

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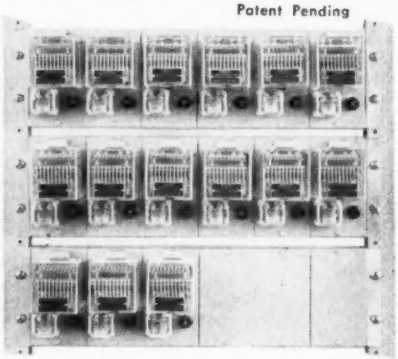
## CODE-TO-SELECTIVE RINGING CONVERTER

Patent Pending



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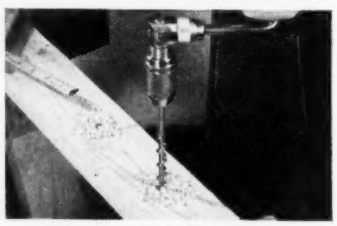
sectional view of 2-Way "Hex" Shank

## • NEW IRWIN 2-WAY "Hex" Shank Wood Bit



**fits both bit braces and electric drills**

Use with hand brace as it comes. Order *without taper square shank,* or use hacksaw to convert to 2-Way "Hex" Shank for use in both hand braces and electric drills. It chucks perfectly—no wobble. Fast boring action speeds work. 2-way usage cuts inventory costs. Longer life cuts replacement costs. Hardened full length. Sizes 4/16 to 17/16". Call your mill supply distributor or hardware wholesaler for complete details.

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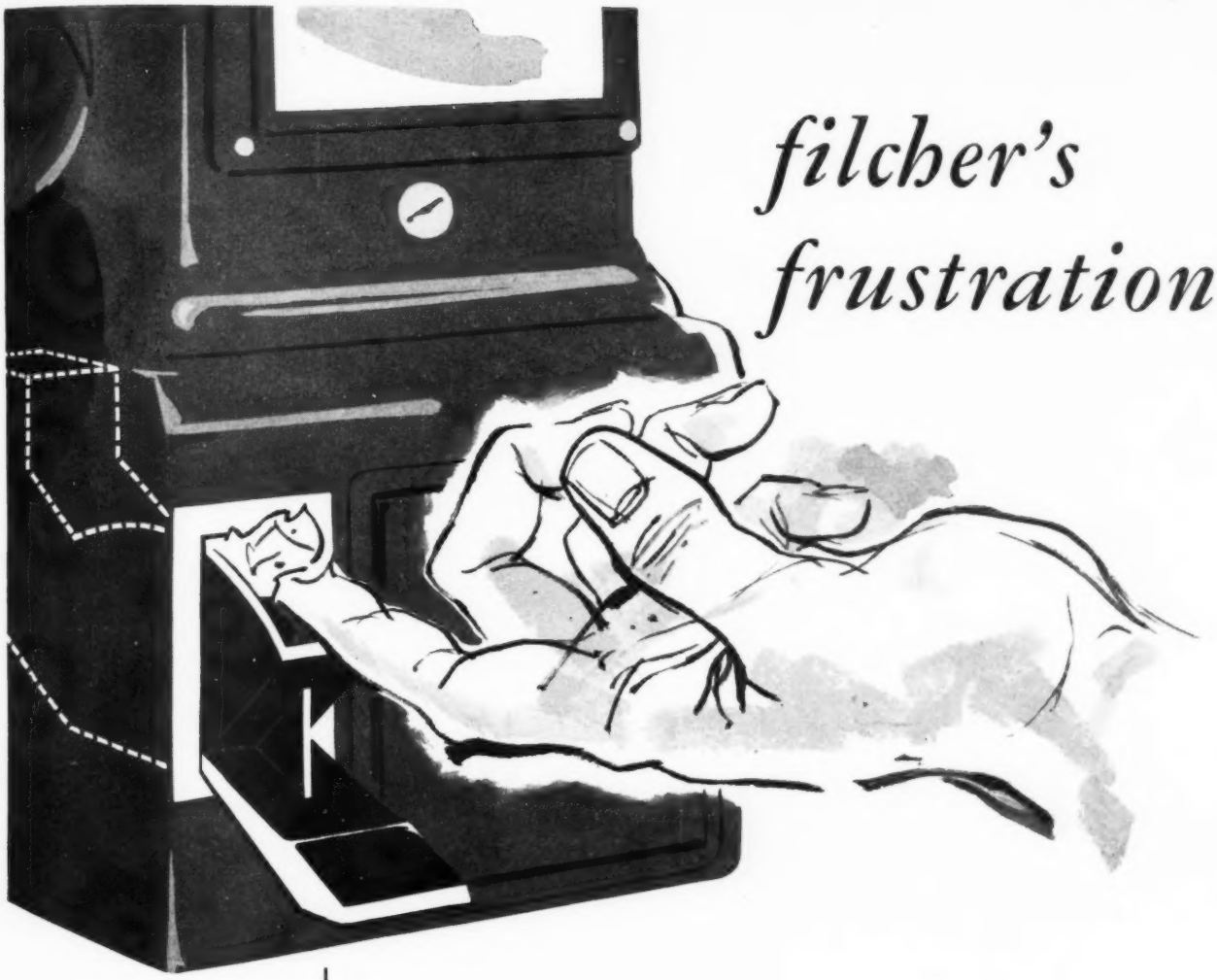

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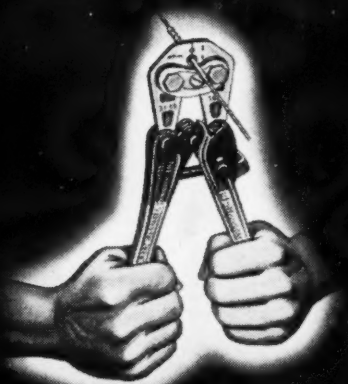

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